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THIS WEEK'S NEWS

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THE RISE AND FALL CLAUSE: FURTHER THOUGHTS

THE continuing stream of letters to *The Builder* on the rise and fall clause is a clear indication of the importance of this subject to the building industry. Obviously, it is important that contractors should have a reasonably firm basis of prices and wages on which to tender. During the war and for some years afterwards that basis simply did not exist, and in these circumstances the rise and fall clause was essential. It was never intended, however, that the rise and fall clause should be a permanent feature of building contracts, and indeed none of the letters which have reached us has suggested that it should be permanent.

There is, however, a widespread—though certainly not unanimous—belief that conditions are not yet sufficiently stable to justify abolishing the clause. To this, we think, there are several answers. First, there are contractors who consider that conditions are sufficiently stable to enable them to tender firm prices, and they are confident that they can deal with any unexpected conditions by keen buying. If these contractors can do it, why not others?

Then, secondly, it seems that some of our correspondents have overlooked the fact that prices are now much more stable than they were two or three years ago. Of course, they are not perfectly stable—but were they ever? The building industry on the whole got along very well without a fluctuations clause before the war, but even in those days prices were not perfectly stable. There were times during the nineteen thirties when prices fluctuated just as much as they have done during the last two years or so. Between January, 1953, and July, 1954, the Board of Trade index of materials used in building and civil engineering (June, 1949 = 100) has moved between a minimum of 128.2 and a maximum of 131.5. Between 1936 and 1937 the Board of Trade index of building materials prices (1930 = 100) jumped from an average of 96.7 to an average of 104.2. Probably, therefore, building materials prices to-day are about as stable as they ever will be. It is, of course, true that with the present rise in the cost-of-living index there is likely to be another increase in building trade wages next February, and materials prices may also increase. But these trends can be foreseen, and contractors have no right to claim the protection of the rise-and-fall clause against trends which they ought to be able to foresee, even if they cannot judge their precise effect on prices.

No doubt unexpected things may happen, but if we are to wait for a state of affairs in which the unexpected never happens, then we are likely to wait for ever. It is, however, fair to say at this point that the Government could help to some extent by not imposing sudden changes in purchase tax, etc.; indeed, they could well go further and abolish purchase tax on building materials altogether, since it only serves to inflate building costs which the Government subsidises in a number of ways.

Finally, even if conditions are not ripe for a total abolition of the rise and fall clause, at least they are sufficiently favourable to justify a conference of the parties concerned to see if the clause cannot be partly abolished on the lines suggested by the Ministry of Works. It has been hinted that such a conference could not do much good since the manufacturers are in no position to quote firm prices to contractors. That we simply do not believe. In any event, that is a matter for the manufacturers to raise if they wish. The duty of the building industry is to press conditions in which they can give the public the benefit of firm tenders.

NOTES & NEWS

DESIGN OF HOSPITALS

REFERENCE was made in our issue of July 2 to the Conference on the Design of Health Buildings, which is being organised by the RIBA on October 21 and 22 next. A large number of applications for membership of the conference have been received but there are still some seats available and it would greatly assist the organisers if members of the RIBA who wish to attend would apply for tickets without delay.

Tickets cost 10s., which includes morning coffee and tea and advance copies of the conference papers. Applications should be addressed to the Secretary, RIBA, 66 Portland-place, London, W1, envelopes being marked "Hospitals Conference" in the top left-hand corner and the remittance enclosed.

A SOUTH AFRICAN JUBILEE

THE National Federation of Building Trade Employers in South Africa next month celebrates its Golden Jubilee at a Congress meeting in Durban from October 25 to 29. Among the official guests are Mr. P. J. Harland, FIOB, resident director in South Africa of Messrs. John Laing and Son, Ltd., who will represent the parent National Federation of Building Trades Employers and also the London Master Builders' Association; Mr. R. O. Lloyd, OBE; and Mr. Ian M. Leslie, OBE, Hon. ARIBA, editor of *The Builder*.

In addition to Durban, Mr. Leslie will visit the Cape, Johannesburg and other Transvaal cities, Southern and Northern Rhodesia, Uganda, Kenya and Khartoum to study at first hand the building industry and African housing problems, returning at the beginning of December.

VISIT TO LE HAVRE

A PARTY of 24 Coventry architects and engineers, headed by Mr. Gwyn Morris, LRIBA, chairman of Coventry Society of Architects, and including Mr. David Percival, ARIBA, Deputy City Architect, will make a four-day visit to Le Havre on September 25. They have been invited to return the visit of 16 members of the Le Havre Society of Architects who spent a day in Coventry in June.

ABBEY CLERK OF WORKS

APPLICATIONS are invited for the post of Clerk of Works to Westminster Abbey. Applicants should be about 45, have a wide general experience, and must hold the City & Guilds Final in Stone Masonry and the Higher National Certificate or Certificate of the Clerk of Works Institute. Details advertised elsewhere in this issue.

PROFESSIONAL ANNOUNCEMENTS

MR. FREDERICK MACMANUS, FRIBA, has taken into associate partnership MR. BRIAN SMITH, ARIBA. The practice will be continued as previously under the style of Messrs. Edward Armstrong and Frederick MacManus, chartered architects, from 28, Gloucester-place, Portman-square, W1. (Tel.: Welbeck 2273-4.)

MESSRS. A. S. WILSON AND PARTNERS, chartered quantity surveyors, announce that from Monday, September 20, their Cambridge office will be at 14, Downing-street (Tel.: 58549).

FROM "THE BUILDER" OF 1854

Saturday, September 16, 1854

TIME FOR SHARPENING TOOLS.—In the Brompton County Court lately a case was decided in which Humphrey, a joiner, sued Messrs. Grey and Ormson, of Chelsea, the horticultural builders, for 1s. 4d. as a quarter of a day's wages, due according to custom while sharpening his tools previous to being discharged for irregularity in attendance in the morning. Defendants urged that it was only when their workmen were engaged in country jobs that they made such allowance, as while on their own premises they were in the custom of sharpening their tools at all times as they became blunted; and that plaintiff was not engaged on a country job when discharged. The judge (Adolphus) said he had no evidence to support plaintiff's demand, and decided accordingly in favour of defendants, with costs.

COMPETITION NEWS

Ankara Development Plan

THE Directorate of Development of the Government of Turkey have announced that an international competition, open to architects and engineers experienced in city planning, is to be held for the development plan of the city of Ankara, Turkey's capital, which has a population of about 340,000. The first prize will be £T30,000, the second £T24,000, and the third £T15,000. Five prizes of £T5,000 each will be awarded to commended competitors.

Announcing the competition, the Directorate of Development have stated that they are offering to competition the improvement of the existing development plan, which has constituted the basis of execution up to the present, and an arrangement answering the future needs and traffic problems of the city. Those interested will be required to visit Ankara for at least 15 days, when every assistance will be given to enable them to study and determine the city's needs. The competition will close on March 10, 1955. Specifications and appendices from the Turkish Embassy, 43 Belgrave-square, SW1, on deposit of £T100. [The Turkish pound is worth approximately 2s. 6d. Ed.]

COMING EVENTS

TUESDAY, SEPTEMBER 21

FEDERATION OF MASTER BUILDERS (LONDON REGION GROUP 6).—Talk and practical demonstration of new range of portable electric hand-saws. Star and Garter Hotel, Putney. 7 p.m.

LONDON ASSOCIATION OF MASTER STONEMASONS.—Distribution of prizes to apprentices. 82, New Cavendish-street, W1. 2.30 p.m.

WEDNESDAY, SEPTEMBER 22

NATIONAL SMOKE ABATEMENT SOCIETY.—Twenty-first annual conference. Olympia Hall, Scarborough. 11 a.m. Continuing until September 24.

THURSDAY, SEPTEMBER 23

LMBA GOLFING SOCIETY.—Fifth annual dinner. May Fair Hotel, Berkeley-street, W1. 7.45 p.m.

SATURDAY, SEPTEMBER 25

INSTITUTE OF QUANTITY SURVEYORS.—AGM. Caxton Hall, Westminster, SW1. 2.15 p.m.

REBUILDING AT COVENTRY.—A general view of the Garden Square, Broadgate, in the centre of the city, which illustrates the progress being made at Coventry in rebuilding after the wartime raids. To the left of the square may be seen Broadgate House, and on the right is a large modern store. In the centre, behind the statue of Lady Godiva, is the entrance to the new shopping precinct, which will be kept free of vehicular traffic. The building of the new Cathedral will add further interest.

CORRESPONDENCE

EXAMINATIONS OF THE RICS

To the Editor of *The Builder*

SIR,—My article on the above subject (your issue of August 20) seems to have opened the flood-gates. I am afraid it is not possible in the space available to comment on all the points raised.

May I take first the raps on the knuckles (your issue of September 10) from Mr. Lockley and Mr. Wheatcroft? My views were given to the Quantity Surveyors' Education Sub-committee some years ago, when I was a member. Since then I have been "liquidated" (high professional politics—'nuff said). It is not in my power to lay anything before a general meeting of quantity surveyors, and those who have the power would not, I think, listen to the idea. The correspondence may, however, encourage the branches and junior organisations to discuss a problem which evidently has two sides, and, if they think fit, bring pressure to bear at the election or otherwise. I have just kicked-off.

The reports of 15 per cent. and 9 per cent. I gave were verbal. If they had been written, I should have quoted the authority. They came from more than one source, and it is quite easy for the Institution to deny them. There is no smoke without fire.

I cannot find the "confusion of thought" to which Mr. Vinycomb (your issue September 10) refers. Quantity surveyors do not hold themselves out as teaching land surveying, law of dilapidations and arbitration, etc. It is such subjects that seriously augment the spare time and evening class work necessary to pass the Institution examinations.

The statement of Mr. Pyser (your issue August 27) that the examinations have always been complex may, perhaps, best be refuted by my own case. After the 1914-18 War I passed a special single examination for ex-Service candidates with an 18 months' correspondence course, working for that period in a small provincial architect's office which, under present conditions, would never have been accepted as suitable. The examination was a mixture of Inter and Final papers (including the Final Quantities). Those taking the full examination had only two stages, and, apart from a pass in the typical subject, an average pass in the rest was sufficient. We certainly had a full Monday to Friday, but Monday was more or less a country holiday in Osterley Park, waiting our turn for half an hour's work taking a line of levels and measuring three angles with a theodolite. After passing I knew even less than the ex-Servicemen complained of (your issue August 27) by "Probationer" (but I know that I realised it).

Since those days a third examination (the "First") has been added, introducing (amongst other things) the mysteries of the economist.

> "I've got him on the list
> He never would be missed
> *Chorus:* He never . . ."

The compulsory minimum of four years' training, the reasonable standard in *all* subjects and the two years interval between Inter and Final are all later additions. The recent introduction of electrical work and builders' plant involves extended study. The educational test, too, has been stiffened by the addition of History or Geography to the compulsory subjects. Our Elder Brethren are apt to forget how comparatively easily they obtained admission to the Institution. Certainly, the hinges and lock of the back door, which by-passes the examinations, are rusty, but the door has opened within living memory.

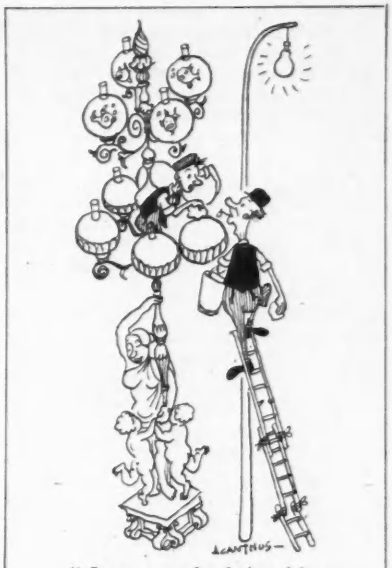
But let me leave answering criticism and turn to constructive thought. The problem of professional qualification is not an easy one. Would your readers, if they knew, fancy entrusting life to a 55 per cent. pass doctor or sea-captain? Moreover, there are those successful in examinations who would fail in a crisis, just as there are those who cannot make the grade in examinations but are nevertheless efficient.

One must not, of course, be too much tied by statistics. Nobody knows better than the quantity surveyor that figures can be made to say *almost* anything, but there is a limit. Such points as the 5 per cent. preferential marks for ex-Servicemen, the easier standard of papers immediately after the war, the possible falling off, on account of present-day distractions, of the self-discipline essential to hard work, all have their influence. It may be that 43 per cent. is not very different from the percentages in other professions, but I feel sure that 30 per cent. is considerably lower. If there is any truth in the 15 per cent. and 9 per cent. there is something very wrong either with the candidates or with the examination.

Of course, the type of student now entering the profession has some bearing on the figures, though I have not seen any of the discrimination referred to by "Wrong Aspirant" (Sept. 3). The RICS is not a social club nor are our offices organised for dinner parties and dances. It is not class we are concerned about but brains. Before the War I used to recruit staff from the higher forms of the public or secondary schools. Now these schools encourage the more able boys to stay till they are due for military service, dangling the carrot of Higher Level Certificate. We only seem to be able to get boys leaving school at 16-17 who are not thought good enough to be tempted to stay on. When the Servicemen come back, they are not prepared to start at the bottom on a low salary (I think of myself as a one-time Oxford scholar and ex-major of 24 working for nearly a year for no salary at all). There seem, however, to be authorities who fix salaries according to age irrespective of value, and are prepared to absorb these men. Such a rule-of-thumb may be convenient for administration where money is no object, but is of no use for private practice which must pay its way.

There is also the factor mentioned by "Wrong Aspirant", and Mr. Blaiker that every junior in the office wants to qualify. An effort was made by the Institution to establish a grade of surveyors' clerks, *i.e.*, workers-up (see RICS *Journal*, December, 1950, p. 495), but this does not seem to have had any success. The workers-up that we used to know before the War have gradually dropped out and are not being replaced. In an office of any size a nucleus of permanent workers-up is invaluable, but one mostly has to be content with youngsters who, as soon as they become useful in that capacity, want to start taking off (or move somewhere else with that in view). To limit the scope of the taker-off's work is more difficult, except in the larger offices which can be divided into watertight compartments. A taker-off in the normal office must develop that sense of responsibility which is necessary for taking charge of the preparation of variation accounts and dealing with contractors—in other words, he must be a quantity surveyor. "Wrong Aspirant's" idea that all students should have an opportunity for experience in taking-off would be admirable if 55 per cent. accuracy were the slightest use in our work. My experience is that checking taking-off means doing it twice.

But it is not only the calibre of student that has influenced recent results. The RICS seem to want to say to the public: "'This fellow has passed our examinations, so you can rely on him as a qualified quantity surveyor"—a rash thing to say of any man of 23 or so. The attempt to attach this label has meant the addition of subjects on the fringe of our profession, and a little knowledge is proverbially dangerous! The student is persuaded that he knows when he has only just skimmed the subject, and he will in any case have forgotten it all 10 years later, when it first arises in his practice. In 30 years' practice the number of dilapidations cases I have been concerned with can be counted on the fingers of one hand. I have never touched a theodolite since my examination. Rather should the Institution say: "This fellow has been trained in a suitable office and has passed



"It may not be designed by the Council of Industrial Design but it's wonderful for breeding gold fish!"

our examinations," adding to employers : "He should be fit for a junior taker-off's job under supervision " ; and to the public : "He has reached a satisfactory academic standard : you must judge from his experience, his references and his personality whether he is the man you want to employ."

To sum up the whole matter : *a student of the intelligence we want and who works hard should feel confident that his preparation for membership of the RICS will not be extended beyond five years because of failure in examinations.*

Here are this year's figures for candidates from my firm's offices :—

First Exam.	2 F 2nd time av. 3½ years training.
Inter	1 P 3rd time 6 years training.
	2 F 3rd time av. 4½ years training.
	2 F 1st time av. 3½ years training.
Final	1 P 2nd time 7 years training.
	2 F 1st time av. 5 years training.

Pleasant reading, isn't it ?

And now, just to add a sting, the Institution writes to one of the Inter failures to say that the period for his ex-Service concessions has expired, and he is required to take the First Examination, from which he had been exempted. I have recommended him to go elsewhere.

ARTHUR J. WILLIS [FRICS]
41/42, Parliament-street, SW1.

STREAMLINING BUILDING EDUCATION

To the Editor of *The Builder*

SIR,—Your leader in the issue of September 3 spotlights an unhappy aspect of the building industry.

My own problem, while not exactly connected with the route from the trowel to the Institute of Builders, must be typical of many potentially very useful but completely frustrated members of the building team.

I am a building draughtsman with no trade behind me. In a fit of misguided enthusiasm I set off on a five-year part-time course at night school and obtained a Higher National Certificate in building. Having cleared the hurdles by a good margin I naturally felt capable of something better and equally naturally expected that my HNC would provide a stepping stone.

After tramping the various Institutes connected with building I found myself in a dead-end, for, while most of them have some say in sponsoring the national certificates, none of them will allow exemptions from parts of their examinations for holders of HNC (as do the Mechanical Engineers), leaving no alternative but to cast away five-years' study and start again, or forget about it.

Surely this is all wrong. There ought to be a chain somewhere.

I should add that although classed as a building draughtsman, my duties also include land and building surveys, estimating, quantities and specification writing together with a fair amount of correspondence, ordering, and so on.

What can the building industry offer to the likes of me at 33 years of age ?

CUL DE SAC.

Manchester.

(*Correspondence continued on page 461.*)

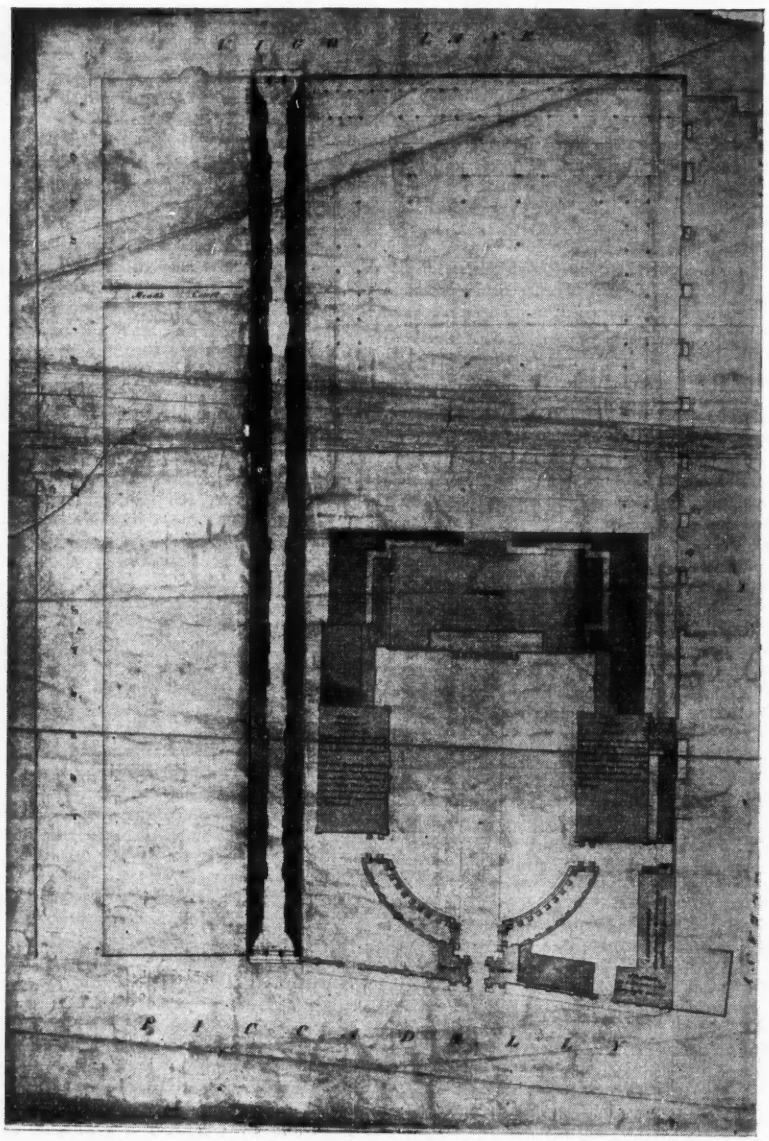
THE BURLINGTON ARCADE

The War-Damaged Portion Rebuilt

THE Burlington Arcade, which shares with near-by Bond-street the distinction of being the most famous shopping centre in London, suffered heavy war damage at the Burlington Gardens end. This has now been repaired, and the new work was opened yesterday (September 16). The following article describes the history of the Arcade and gives details of the new work of restoration which is to the designs of Mr. W. G. Sinning, ARIBA (Bates and Sinning), who, in 1937, succeeded the late Professor Beresford Pite as architect to the owners of the Arcade.

BURLINGTON Arcade was the first shopping arcade to be built in England. That was in 1818.

Lord George Cavendish who lived in Burlington House from 1815 till 1834, found the Mayfair hooligans throwing rubbish over his garden wall. So he commissioned Samuel Ware, architect, to build a covered promenade from Piccadilly to Burlington-street " for the gratification of the publick and to give employment to industrious females." The arcade is reputed to have cost nearly £40,000, and is described in early nineteenth-century travel books as " a chaste and pleasing example of taste and architectural skill ;



SAMUEL WARE'S PLAN for the original Arcade. To the right is Burlington House.
(From a drawing in the possession of the Royal Academy of Arts.)

the shops being appropriately fitted for the sale of books, prints, jewellery, millinery, artificial bouquets and other articles of fashionable demand."

Of the original 47 leaseholders of the 25 double and 22 single shops, six were "industrious females." A double shop was rented for £34 and £7 18s. 3d. rates per annum, while a single shop cost £18 rent, plus £4 4s. 0d. rates per annum. Plans found in Burlington House in 1911 are believed to be some of Samuel Ware's originals. These plans show a Mead's Court leading into Burlington Arcade, but this does not now exist.

A DISASTER

Disaster descended on the Arcade in 1836. "On Saturday night at half past ten fire started at No. 12, Old Bond Street, the house of Mr. Absolon, military clothier . . . The flames began to creep into the Western Exchange behind Mr. Absolon's premises and in no time spread to No. 14, Burlington Arcade, a pastrycook's shop. The havoc in Burlington Arcade was precipitated by nearly all the inmates running about distractedly and policemen and strangers removing their goods and belongings.

"Then Nos. 58 and 59, a hosier's shop, on the opposite of the arcade fell prey to the flames . . . The fire spread to Nos. 12, 13 and 60 and 61. Within a very short time all these houses were reduced to ruins. The heat in the arcade was unbearable, the centre resembling a vast furnace. Then Nos. 56 and 57 were slowly devoured.

"While the fire was raging in the Arcade, Lords Melbourne, Adolphus Fitzclarence, Munster, Sir George Wombwell and several magistrates and MPs stimulated the firemen and police in their efforts to save the property and put out the fire." (*The Times*, Monday, March 28, 1836.)

No records can be traced of the rebuilding of the Arcade after the fire.

ENTER BERESFORD PITE

In 1911, Professor Beresford Pite was appointed architect to the Arcade, and added an additional storey to the Piccadilly frontage, surmounted by the arms of Lord Chesham. Professor Pite also acted as architect for changes to the Burlington Arcade made in 1931, when the iron gates at the Piccadilly end were removed and a new arch built (*The Builder*, July 24, 1931). A proscenium arch replaced the three arches which are shown in most early engravings of Burlington Arcade. Beresford Pite's arch (see illustration) is consistent with Samuel Johnson's definition of "Arcade" in his Dictionary of the English Language, "a continued arch" or "a walk arched over" (but see "Nineteenth Century Architecture in Britain" for an evaluation of Pite, in which he is described as "the arch rogue of unoriginality," although, according to Mr. Goodhart Rendel, "Pite was the first live Greek since Cockerell, and his much abused entrance to Burlington Arcade derives from Michelangelo, however remotely").

VALUE OF THE ARCADE

An interesting sidelight on these matters is the ever-rising value of Burlington Arcade. In 1818, Lord George Cavendish received £1,246 per annum in rents. By 1846 the rentals totalled £8,640, "but only half of that reached the owner's pocket," wrote a knowing scribe of the day. In 1879 the property came into the possession of the Chesham family, whose motto *Cavendo Tutus* (Secure in Caution) can be seen on the arch of the Burlington Gardens entrance. There is no record of the market value at that time, but when the family sold in 1926 the price was £330,000.

LONG LEASES

The new owner immediately offered 80-year leases (with existing leases varying from three to eight years) for the individual shop premises at a rental of £75 for single and £150 for double premises, per annum. Although all the leases were not sold, the total amounted to £500,000.

Since then the ownership has changed three times, the Prudential Assurance Company now holding the freehold on an unexpired 54 years' lease at £5,540 per annum.

The Piccadilly entrance to the Arcade, designed in 1931 *by the late Professor Beresford Pite.*

Since 1937 the architect responsible for repairs and alterations to Burlington Arcade has been Mr. W. G. Sinning, ARIBA (of Bates and Sinning). In 1937, Mr. Sinning designed some alterations to the Burlington Gardens end (see *The Builder*, June 4, 1937) and he was also responsible for the first-aid repair work following the bomb damage of 1940.

In 1946 application was made to rebuild the damaged parts of the Arcade and the work was started on the shops in December, 1952, with agreement to complete in time for the Queen's Coronation. The site was razed to ground floor with basement walls under the shops exposed. New concrete foundations and frame construction were required to comply with modern regulations and conditions. The old paving of the Arcade was taken up and relaid with new very thick Yorkshire stone of an unusually large size in order to keep the new work as close as possible to the original.

THE NEW SHOP FRONTS

The new shop fronts are constructed of Empire mahogany and match the extremely fine Regency detail of the originals. The store board grilles are now constructed of wrought-iron, whereas the original grilles were made of cast lead. The framework of the building was put in to suit these shop fronts, and the first floor carried on steel stanchions to match existing and original work.

On completion of the first stage of the contract the concrete forming the roof to the shops was covered with asphalt against weather. Precast units were used in the slab to allow for minimum disturbance to tenants when staircases were to be installed in the next phase of the work.

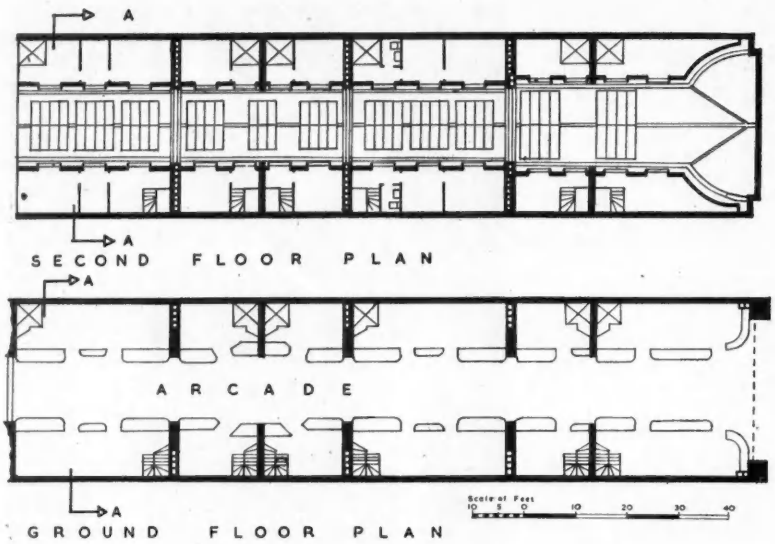
THE SECOND STAGE

The second stage of the contract started in January, 1954, when it was possible to adhere even more strictly to a reproduction of the original construction. This consisted of a timbered joisted second floor and timber constructed mansard roof. But considerable difficulty was encountered with the brick panels at first-floor level overlooking the walkway of the Arcade.

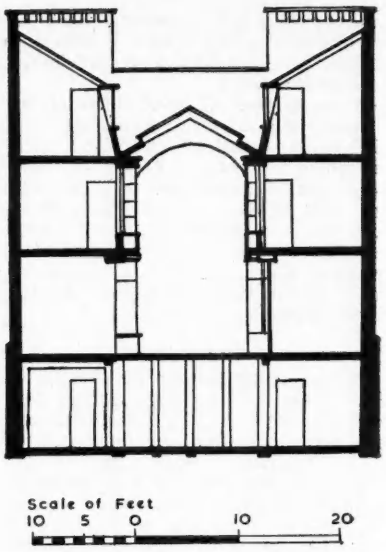
The original brick panels were constructed with a very small brickette which is not stocked to-day. However, specimens of the original brick were eventually matched for colour and texture. The bricks were then cut to die square on all faces for size and shape, and rubbed down with a carborundum wheel. In the structure they are bedded with very fine mortar.

The colour scheme for the Arcade has been changed. The new colour is pink with the Regency ornamental plaster moulding picked out in white. The windows above the shops have been rebuilt in a faithful Regency style, the original sash bars being carefully scraped down to secure specimens for the joiners to follow.

Specimens of the original stairs and the continuous iron handrail are still in use at Lord's, the hosiers at Nos. 66-70, Burlington Arcade. The newly-built stairs



Ground- and first-floor plans (1954).



Section A—A through Arcade.

and handrails are closely modelled on these originals. But modern forms of construction and plywood have been used for the new stairways, which are easier to mount than the originals because of intermediate landings being built wherever possible. Plywood balustrades have also been used in place of wrought iron balustrades in the originals.

Names and lettering on the shop boards have been arranged to suit individual tenants. The lanterns lighting the walkway of the Arcade were salvaged after the bombing, and they have been reinstalled. The stone work at both ends of the Arcade has been cleaned.

The roof of the walkway to the Burlington Gardens entrance to-day is a unique piece of reconstruction. Constructed with heavy timbers to form a flat conical vault, it blends remarkably well with the curved elevation of the brick panels over the shops.

If you are in the mind to buy a present for a relative or friend, you will enjoy sauntering from window to window. But you must not whistle, sing, play a musical instrument, carry a parcel, open an umbrella, nor hurry to the point of running. If, in a moment of forgetfulness, you start to do any of these things, a Commissionaire, ex-10th Hussars, dressed in dignified and special clothes, will gently tell you that it is not allowed.

Until recently perambulators in the Arcade were forbidden. It was considered that they caused soldiers to follow the nursemaids and gossip, thereby obstructing the way of clients visiting the shops. But baby carriages are small these days, and are now allowed in what is the first, and many will think, the finest shopping promenade in the world.

Sir Robert MacAlpine and Sons were the general contractors. Sub-contractors were: Shop fronts, Hampton and Sons ; York stone paving, William Knight and Sons ; wood blocks, Bennetts ; plumbing, Smeaton and Sons and R. G. Witney ; plastering, Veronese ; fibrous plaster, Jackson ; painting, South London Decorators, Ltd.; roof slating, Roberts Adlard ; electrical engineers, Leaf and Carver.

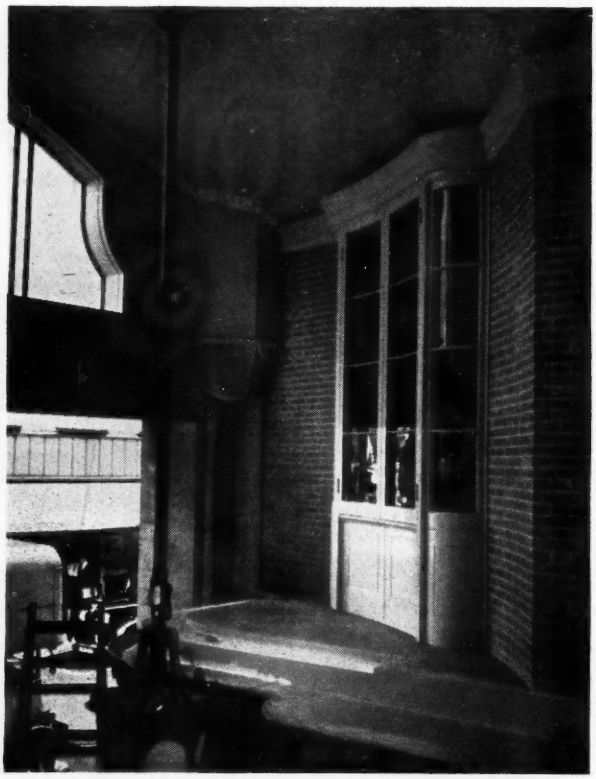
Suppliers were : Joinery, Hampton and Sons ; stone (Portland), South Western Stone Co., Ltd. ; ironmongery, Yannedis and Co.; bricks, Wills and Packham ; and paint, Lewis Berger.

Left : Detail of Arcade roof.
Below : Rubbing down bricks.

BURLINGTON ARCADE : The Burlington Gardens Entrance.

W. G. SINNING, ARIBA (Bates & Sinning), ARCHITECT

View in Arcade, looking towards Piccadilly entrance.



View at first floor, Burlington Gardens entrance.

THE BURLINGTON ARCADE

Rebuilding after War Damage

RECONSTRUCTION OF 117, BISHOPSGATE, EC2

Architect
FRANK SCARLETT, BA, FRIBA

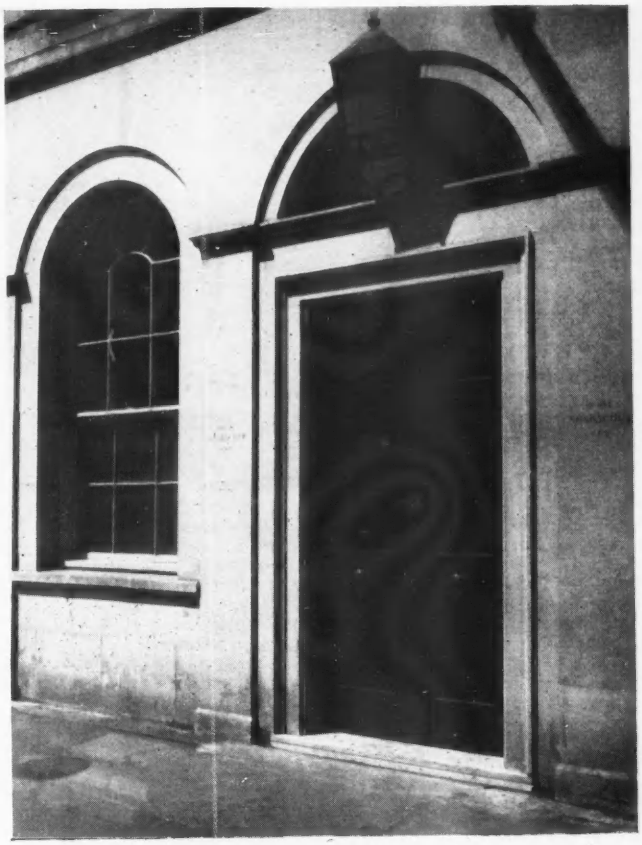
Builders
J. W. WEST & SON

OLD prints show that this building was at one time a fish restaurant. In 1952 it was a clothing warehouse, with most of the windows blocked up and a pseudo-Tudor shop-front.

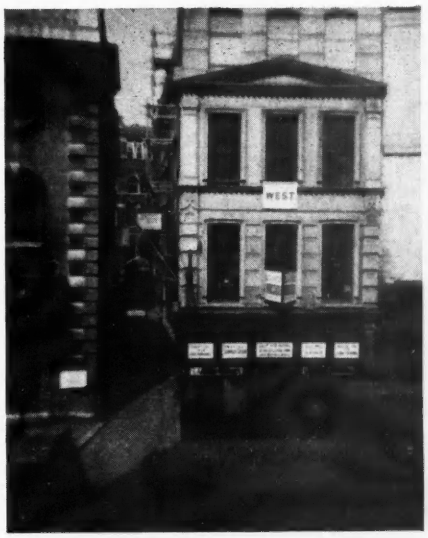
One of the directors of a private bank (Henry Ansbacher and Co.) realised the suitability of its position for an office and its possibilities for improvement, and acquired the lease.

The windows were opened up, the fabric of the building restored, and a Portland stone ground storey, more appropriate to the nature of the business and the architecture of the superstructure, was put in. It was at first hoped to restore the original brick face of the upper storeys, but upon hacking off a portion of the stucco the bricks were found not to be in good enough condition. The architect decided, therefore, to be content with hacking off some superfluous embellishments.

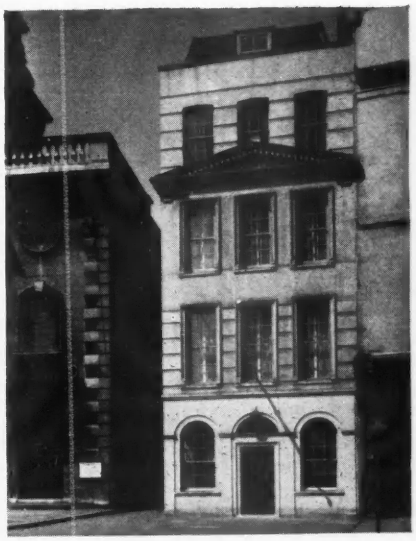
The building now provides the firm with self-contained offices in which the rooms have light, air and aspect not always to be found in offices in the City.



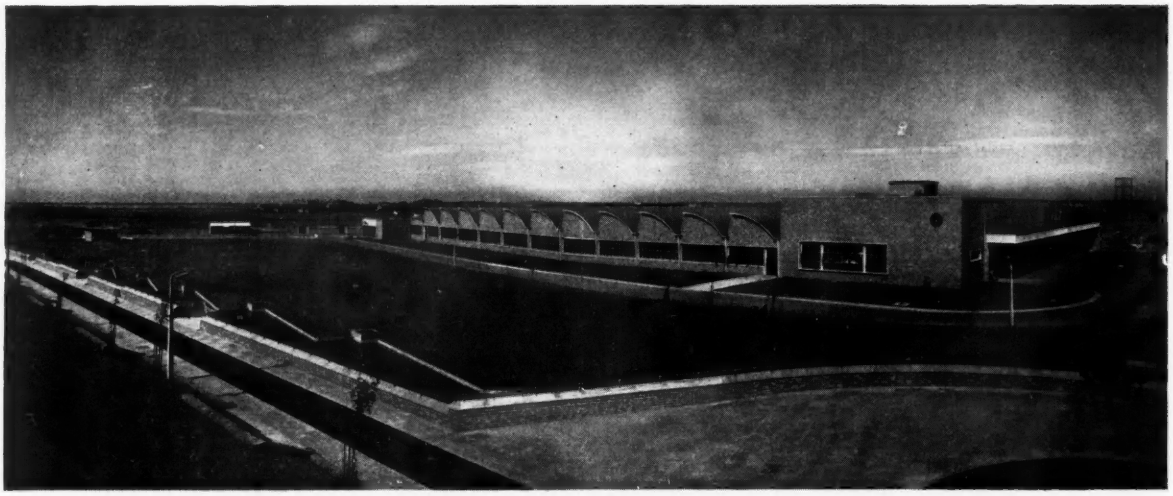
Detail of reconstructed entrance.



A view taken before work began . . .



. . . and after reconstruction.



General view from the south-west. Below : Plan of the factory.

Factory at Moreton, Wallasey, Cheshire, for Cadbury Bros., Ltd.

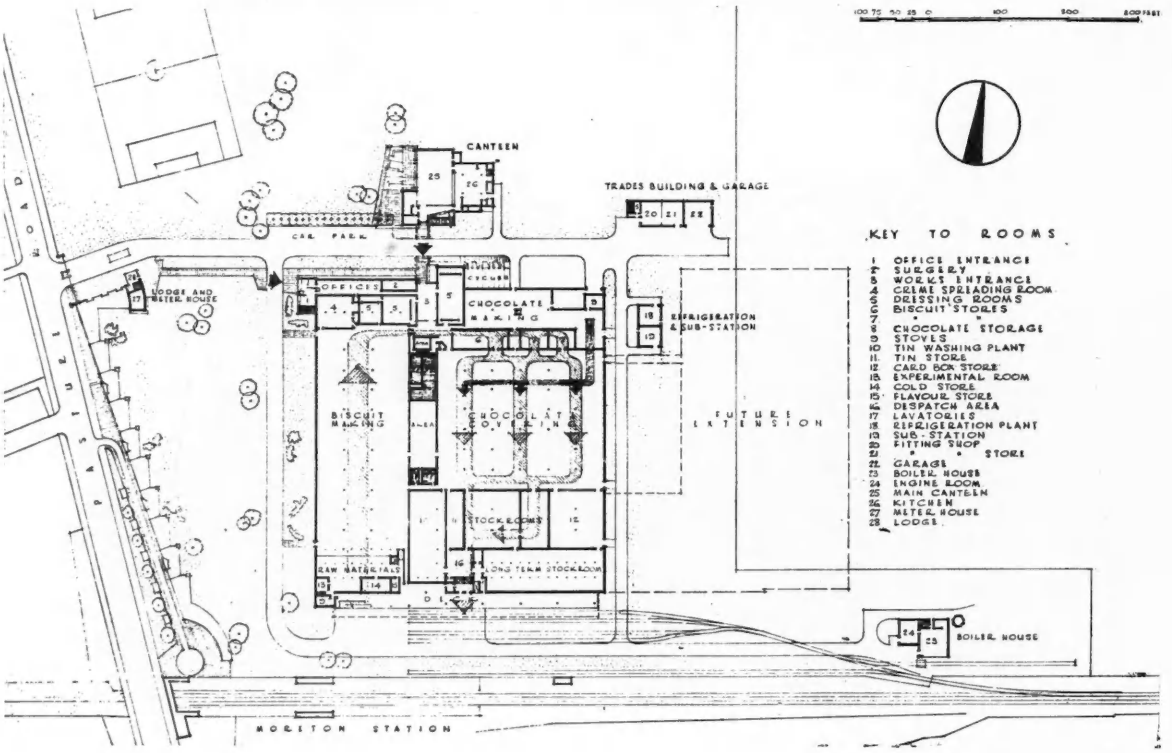
C. J. WILKINSON, LRIBA, STAFF ARCHITECT

Architectural Assistants
J. M. MURTAGH, ARIBA, J. C. HOLT, ARIBA

Landscape Consultant
G. A. JELLICOE, FRIBA, P-PILA

Builders
J. GERRARD & SONS, LTD.

THIS new factory—to be opened to-day (September 17) by Mrs. Laurence Cadbury—in a development area for Cadbury Brothers, Ltd., provides single-storey accommodation for the production of chocolate biscuits and two-storey storage accommodation for raw materials and finished stock. It employs 450 men and women with an eventual capacity for 600 employees in the existing buildings. The total floor area is 220,000 sq. ft.



Site.—The site is on the north side of the Wirral Electric Railway about half a mile from the coast with road access from Pasture-road to the west. The natural fall of the site is from the railway, north towards the River Birket, an average of 10 to 12 ft. The north side of the site was low-lying and marshy and site levelling was an extensive operation, to provide a level platform for the main factory buildings above the highest known flood level and then to grade the land towards the Birket.

The west portion of the site between the west front and Pasture-road is grass, and trees are planted. Mr. G. A. Jellicoe, FRIBA, P-PILA, is responsible for this portion of the work and his landscaping scheme includes a series of ponds and cascades down the west side of the site, the water being kept in motion constantly by a pump in the lodge building. The land north of the site beyond the north road and behind the canteen is to be permanently preserved for playing fields and recreation. All extensions to the main factory will take place in an easterly direction.

Plan.—The production areas are mainly single-storey north light structures and all other departments are contained in flat roof framed buildings with top light wherever possible. The works entrance faces the north road. Dressing-rooms open off directly from this hall and time clocks are sited in the lobby between the two production areas, so that workers may change and clock in before entering production rooms. The offices and surgery are on the north side of the factory and approached from the west front through the office entrance. These have their own lavatories and cloakrooms. The main works lavatories are placed centrally between production rooms to the north and south of an open area. All cloakrooms have heated racks and are equipped with showers. The ancillary buildings are sited with a view to future extension.

Construction.—The whole of the buildings are in reinforced concrete frame construction with non-load-bearing brick walls. The main production areas are roofed with north light barrel-vault reinforced concrete construction. These cover an area of approximately 130,000 sq. ft. Spans average 40 ft. dictated by economy in plant layout; the chord width is a standard 28 ft. 6 in. All columns to support shell roofs are pin-jointed at their base. External brick curtain walls and north to south internal walls are generally 13½ in. brickwork. East to west internal walls are generally 9 in. brickwork. All flat-roofed buildings are reinforced concrete with first-floor loadings of 5 cwt. and 3 cwt. for raw materials, stores and stockrooms, respectively. Barrel-vault roof structures are separated from flat roof structures by expansion joints and are themselves divided in a north-south direction.

The boiler-house, sub-station and trades building are all reinforced concrete framed with barrel-vault roof construction and brick curtain walls or brick infilling. Vertical patent glazing is used in both the boiler-house and trades building to give glass walls. The main canteen is reinforced concrete with continuous shell roof construction to provide a room free from columns. Flat-roofed sections are load-bearing brickwork with reinforced concrete roof slabs.

Finishes.—The barrel-vault roofs are finished with an average of 2 in. Vermiculite insulation and three layers of bituminous roofing felt with a green mineral finish. Flat roofs are finished level with 2 in. Vermiculite and asphalt. External walls are in multi-coloured rustic facings with struck pointing in Leighton Buzzard sand mortar to enhance the colouring of the individual bricks. Window surrounds and copings and facing to exposed concrete on the west and north elevations are in reconstructed stone.

Internal surfaces of shell roofs are finished with two coats of cream cement paint and two coats of glaze to produce a permanent surface which may be regularly washed down. Ribs, frames and columns have been painted

Office entrance.

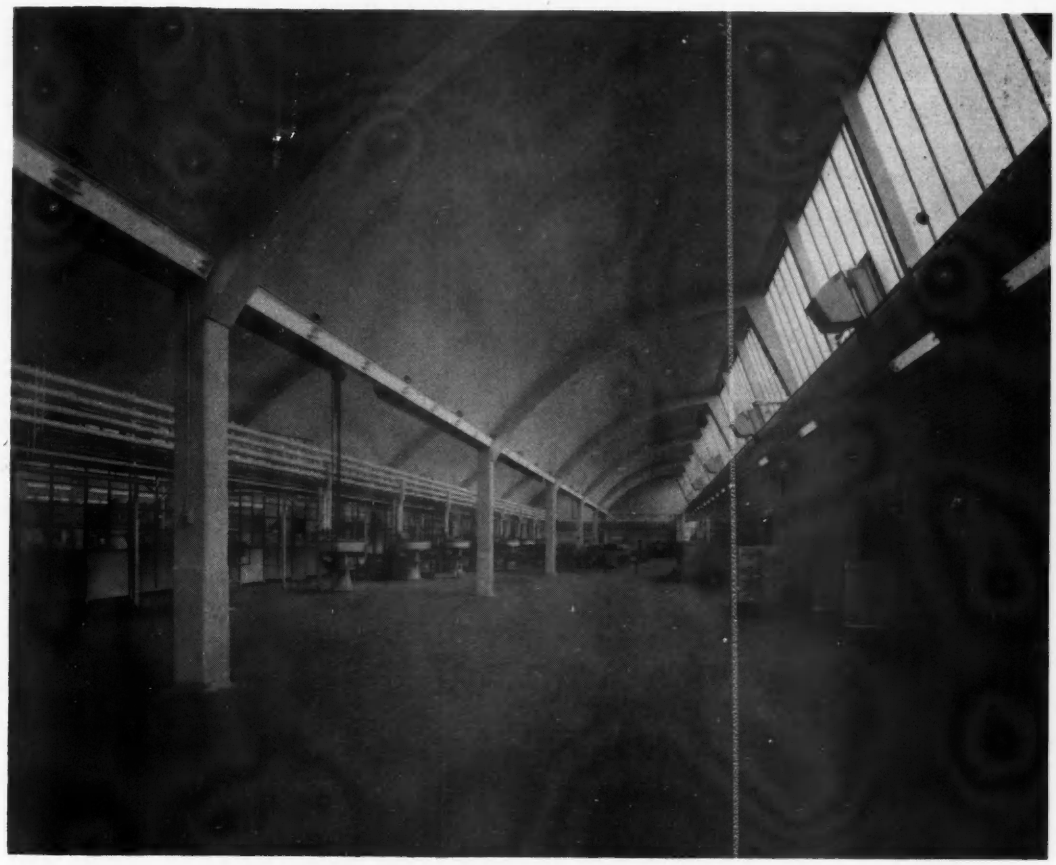
West elevation of canteen. Below : Entrance lodge.

in colours appropriate to the room temperature, pink in cold rooms and lime-green in hot rooms.

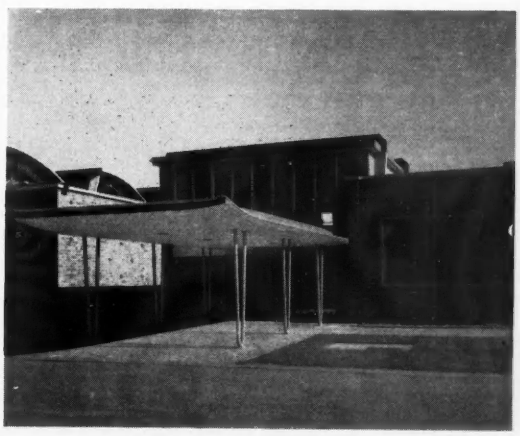
Heating.—All heating in production areas is by unit heaters. In flat roof buildings, including dressing-rooms, lavatories, stores, etc., the heating is by high level coils and calorifiers.

Offices, etc., are heated by concealed vectairs in wall recesses, and the canteen by mechanical forced draught ventilation.

Plant layout was carried out by the Engineering Department of Cadbury Brothers, Ltd. Site levelling was by Messrs. Lloyd and Cross, Ltd., Birkenhead.



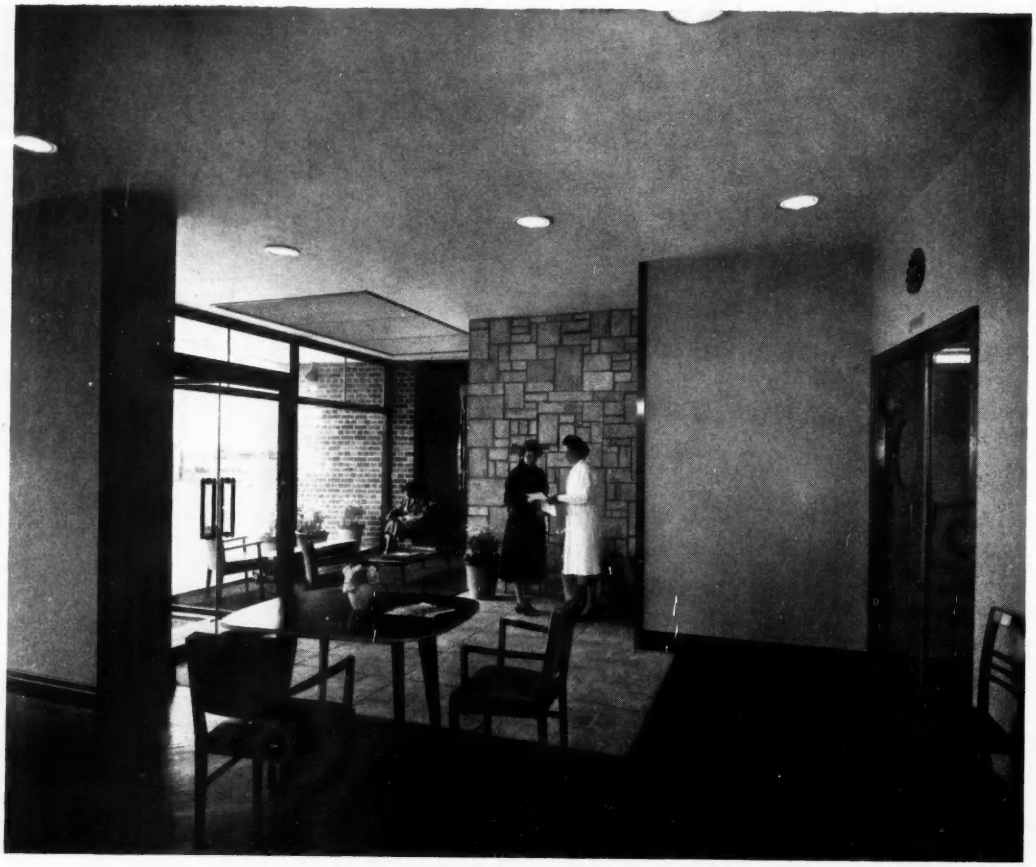
Typical interior view before the installation of machinery was completed.
Below : (Left) Main works entrance. (Right) Lavatories.



Sub-contractors were :—

Quarry tile flooring, grey quartzite flooring, gold quartzite fascia (office entrance), John Stubbs (Marble and Quartzite), Ltd. ; faience tiling, Shaws Glazed Brick Co., Ltd. ; reconstructed stonework, Empire Stone Co., Ltd. ; metal windows and lantern lights, Crittall Manufacturing Co., Ltd. ; north light patent glazing, patent glazing to boiler-house, Mellowes and Co., Ltd. ; chimney-stack, P. C. Richardson and Co., Ltd. ; felt waterproofing to shells, Ruberoid Co., Ltd. ; facing bricks, Buckley Junction Brick and Tile Co., Ltd. ; reinforced concrete, "Twisteel" Reinforcement Co. ; granolithic reinforcement, Surfastol, Ltd. ; factory fencing, Bayliss Jones and Bayliss, Ltd. ; folding doors, Bolton Gates, Ltd. ; sliding door gear, P. C. Henderson, Ltd. ; locks, Chubb and Sons, Ltd. ; dressing-room fittings, Lockerbie and Wilkinson, Ltd. ; roiler shutters, Roller Shutters, Ltd.

"Ellicem" finish to underside of shell roofs, etc., John Ellis and Sons, Ltd. ; sanitary fittings and office partitions, Rowe Brothers, Ltd. ; asphalt roofing, Val de Travers, Ltd. ; "Twide" glass domes, T. and W. Ide, Ltd. ; furniture, fabrics and carpet, Browns of Chester ; layout of grounds, Clapham's Nurseries, Ltd. ; heating and ventilating, Brightside Engineering Co. ; electrical installation, British Insulated Callenders Cables, Ltd., and Lee Beesley and Co., Ltd. ; tubular scaffolding and metal shuttering, Scaffolding (Great Britain), Ltd.



FACTORY AT MORETON, WALLASEY. Waiting room in office entrance.
Below : Another view of the interior of the office entrance.

CORRESPONDENCE

(*Continued from page 450.*)

ARCHITECTS' RESPONSIBILITIES

To the Editor of *The Builder*

SIR,—It is very embarrassing to me when a client invites his contractor to submit his own quantities and estimate, the price is found to be much lower than the lowest of tenders obtained from a bill of quantities, and the job is ultimately completed satisfactorily. My personal experience does not support the percentages illustrated in Mr. John Tucker's letter published in *The Builder* of August 27. Such experience has made me wary of sponsoring the employment of quantity surveyors for jobs ranging up to £18,000. It is the employers' concern how they spend their money, but my responsibility to see that they are made happy and satisfied.

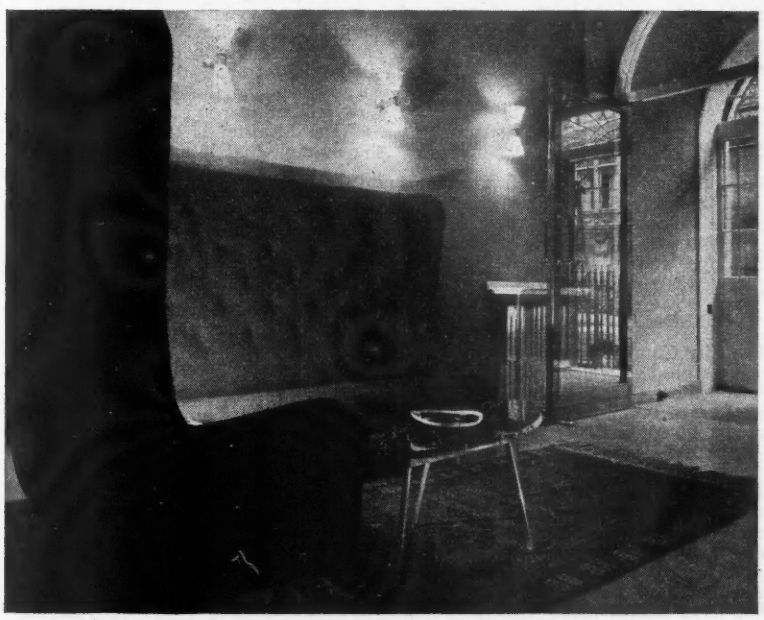
There were in use three modes of measurement, and the users of each claimed that the others were wrong. The method for the last few years has been rationalised, and, excepting contractors' method, I would ask Mr. William Todd (your issue of September 3) which of the four he would consider correct to use in connection with the materials a journeyman would require to carry out the particular job. Many quantity surveyors have been called upon to give evidence concerning errors committed, but Mr. Todd has not mentioned one case to substantiate the views expressed in the penultimate paragraph of his letter.

Mr. Campbell (your last issue) makes so many suppositions as to what witnesses do in the witness-box as to cause me to doubt whether he has ever entered one. Case law has determined that an architect is not relieved of his responsibility by the circumstances that a clerk of works, found at fault, is employed full time or not. A very interesting series of articles by a legal correspondent published in *The Builder* some months ago concerning his profession apparently has not convinced Mr. Campbell. Apparently, also, he has no idea who provides the money for quantities and estimates given freely, which amounts to millions of pounds every year.

To conclude, I do not distrust clerks of works, or quantity surveyors, as they are necessary on large jobs. But my criticism concerned responsibilities which should be shared. An entry in the contract that the bill of quantities is accurate would ease the burdens which architects sustain, and would be a stipulation welcome to contractors. It is inconceivable to me how it can be possible for an architect to introduce extras and variations without the knowledge of the employer when he has on his payroll the services of a clerk of works and quantity surveyor, both of them having access to the architect's drawings and documents. Will your readers please try to enlighten me ?

W. MACDONALD.

16, Chiswick-lane, W4.



DRAPERS' CHAMBER OF TRADE.—This building, at No. 4 Harley-street, W1, has been converted by Messrs. T. P. Bennett & Son, FF./AA.RIBA, to serve as a new headquarters for the Drapers' Chamber of Trade. The decoration and furnishing of the ground floor were undertaken by Mr. Misha Black, OBE, FSIA, and Mr. Ellis Miles, ARIBA (Design Research Unit). The photograph shows the entrance hall with mahogany doors to the new vestibule, and the banquette and occasional table. The banquette was designed by Mr. Misha Black in collaboration with Mr. Ernest Race.

ARCHITECTURE IN SINGAPORE

A Recent Exhibition

SINGAPORE was virtually uninhabited when, on February 29, 1819, Sir Stamford Raffles, having persuaded the Sultan of Johore to cede the island to the East India Company, hoisted the British flag on the remains of the fortifications of the ancient maritime capital of the Malays. The remarkable change from a desert state to a populous and flourishing settlement, with a great number of fine buildings, was well illustrated in an exhibition of photographs held during March and April this year in the British Council Hall, Singapore. The exhibition, sponsored jointly by the Singapore Art Society and the Institute of Architects of Malaya, consisted of photographs taken by Mr. C. A. Gibson-Hill, MA, ARPS, of the Raffles Museum, Singapore, to illustrate the history of building in the settlement over the past 125 years. The collection showed for the most part buildings extant in 1950-54, but included also copies of some of the old prints and paintings in the Raffles Museum and in Mr. Gibson-Hill's personal collection, showing structures and vistas that have now disappeared. It is hoped, we understand, to publish about two-thirds of these pictures, with additional material, in book form, through the Government Printer, Singapore, some time next year.

In the meantime, an excellent idea of the architecture of Singapore and its history may be gained by those unfamiliar with it from an illustrated and annotated catalogue of the exhibition prepared by Mr. T. H. H. Hancock, ARIBA, MTPI, Senior Architect, Public Works Department, and Mr. Gibson-Hill, a copy of which has been sent to us by the Information Officer for Malaya in the UK (57, Trafalgar-square, WC2). The style of building in the early years of the Settlement was Palladian, introduced by an able architect, G. D. Coleman, who, after practising in Calcutta from 1816 to 1820, and in Batavia from 1820 to 1826, finally settled in Singapore, becoming first Government Superintendent of Public Works, and holding office from 1833 to 1841. Though a confirmed Palladian (his Armenian Church, 1835, has a strong suggestion of Gibbs about it), Coleman, like his contemporaries in this country, also dabbled in Gothic. McSwiney continued the Palladian tradition with his distinguished Church of the Good Shepherd (1843-6), with a fine tower and spire by C. A. Dyce.

Other architects of distinction in the earlier years included J. T. Thomson, the Colony Surveyor, and J. F. A. McNair, examples of whose work are illustrated in the exhibition catalogue. During the present century Messrs. Swan and Maclaren have carried out much excellent and varied work, including the Victoria Memorial Hall (1902-6), in the Renaissance manner, and the Church of St. Joseph (1906-12), a striking essay in orientalised Gothic. Messrs. Keyes and Dowdeswell have specialised in the last decade or so in large commercial structures, the China Building having both occidental and oriental characteristics, while Mr. F. Dorrington Ward has sustained formal classicism in his domed and colonnaded Supreme Court (1937-9).

It should not be thought, however, that Singapore is entirely traditional in its outlook—it has a vigorous contemporary movement, witness the Clemenceau-avenue flats, by Mr. D. C. Rae (1949-51), the Cathay Building, by Mr. Frank Brewer (1937-9), flats in Upper Pickering-street, by Mr. S. C. Wooler (1950-2), flats in Clemenceau-avenue, by Mr. W. I. Watson (1951-3), the Odeon Cinema, by Messrs. Palmer and Turner (1952-3), the Nurses' Home at the General Hospital, by Mr. K. A. Brundle (1953), and Prison Officers' flats, by Mr. T. H. H. Hancock (1953), all of which are shown.

We are surprised to find no mention of Raffles College, now part of the University of Malaya, an admirable building the result of a competition held not long after the First World War, and won by Messrs. Cyril A. Farey and Graham Dawbarn. We understand that it survived the Japanese occupation intact. Though apparently not represented in the exhibition, it will presumably be included in the book which we are promised later.

The present catalogue includes 35 half-tone illustrations, with a general introduction and notes on each of the 180 exhibits. G. J. H.

BASIS OF SELF-BUILD SCHEMES

Judge's Comments on Members' Responsibilities

JUDGE FORBES said at Birmingham County Court on September 9 that the whole basis of a self-build housing scheme was that everybody went to work at the proper time and did his full shift. Otherwise there would be delays and disorganisations.

He gave judgment with costs to the King Street Self-Build Housing Society, Ltd., against whom Arthur Hudson, aged 34, an engineer, of Meadthorpe-road, Great Barr, Birmingham, had claimed £50 damages, and had also asked for an injunction restraining the society from excluding him from membership.

Hudson's case was that he was sent by his firm to Italy to work and when he returned to the site where he had helped to build houses for two years he was turned away. He also said that he was moved down the list for a house, which meant a wait for an extra year.

He denied that he frequently arrived late at the site where 32 men were building their own houses, and sat in his car smoking while the heavy preparatory work was being done.

Anthony Livermore, secretary of the society, said in evidence that Hudson's time-keeping was "exceedingly bad." When Hudson went to Italy for the second time he was given the "generous choice" of moving down the list or paying £4 5s. a week for substitute labour. He did not agree that the society wanted to push Hudson out.

The Judge said that he was completely satisfied that from the moment a resolution was passed that Mr. Hudson would have to move down the housing list he had made up his mind that he would not move down. He found that Mr. Hudson offered his verbal resignation by saying words to the effect "I am out."

ANNUAL REPORT

The Builders' Clerks' Benevolent Institution, 47, Bedford-square, WC1, have now issued their 87th annual report, together with the rules of the Institution.

CAMBRIDGE DEVELOPMENT PLAN

Minister Postpones Decision on Spine Relief Road

MR. HAROLD MACMILLAN, Minister of Housing and Local Government, has approved the County of Cambridge Development Plan with modifications. He has decided to leave in the plan the proposed spine relief road intended to relieve traffic pressure in the centre of the City of Cambridge, but there will be no final decision about the road for at least five years, at the end of which the statutory review of the plan will be due to take place. There will then be an opportunity for the matter to be considered further before any final decision is taken on a scheme for road construction.

In a letter to the County Council the Minister says that he does not consider that alternative suggestions for easing the traffic problem in the centre of Cambridge offer a practical solution and, as the volume of traffic through the City is likely to grow during the next 10 or 20 years, the line of the road should be safeguarded against development during the next five years so that the matter can be examined afresh at the end of that period in the light of traffic statistics which he is asking the County Council to prepare.

The letter says that the Minister gave special consideration to the proposals affecting the city. As the County Council accepted the view that congestion was caused largely by local traffic, they considered that the remedy lay in the provision of a relief road as near as possible to the central streets. A route was selected on the eastern side of the city centre running southwards from Histon-road, across the western end of Mid-Summer Common to Jesus-lane, and then across Christ's Pieces to rejoin the central streets via Emmanuel-street to St. Andrew's-street. In the present development plan, however, only the northern section of this route, terminating at Jesus-lane, was included.

This proposal was criticised on grounds of cost and effect on properties, of the probable ultimate effect on Christ's Pieces, and generally on the character of Cambridge, and it was urged that a relief road was not necessary.

ALTERNATIVE PROPOSAL

The City Council proposed as an alternative the gradual widening of the central streets themselves. The University objected to both proposals, but considered that congestion could be relieved by better car parks. The County Council contended that the alternative of widening the central streets would be a slow and costly process and would alter the familiar character of Cambridge. Car parks might free the roads of standing vehicles, but the problem of local traffic would remain and increase.

The letter continues:

"The Minister appreciates that in old and historic towns like Cambridge, whose central streets are inadequate for present-day traffic, proposals such as the spine relief road must inevitably give rise to sharp controversy," the letter continues. "At the same time, he does not feel that such controversy justifies the abandonment of any attempt to solve the problem." All were agreed at the inquiry that the traffic problem in the centre of Cambridge was serious now and would certainly become more serious. The Minister had to regard probable future as well as present needs. He agreed that greater parking facilities were urgently wanted, and was glad that the City Council intended to provide a multi-storey garage in the proposed new Guildhall-street area. He hoped that scheme would be undertaken with as little delay as possible. He did not consider, however, that the provision of more parking space and the provision of the proposed routes for through traffic to the east and west of the City would in themselves necessarily be sufficient to cope with the problem of central traffic congestion in the longer run.

Of the City Council's alternative suggestion of widening the central streets the letter says that the Minister's view was that there was no real prospect that this method would afford an effective solution.

"It would be destructive of existing properties, very slow and expensive and disruptive of shopping and commercial activities over a long time," says the letter.

MINIMUM DISTURBANCE

"On the other hand, the new route chosen in the plan by the County Council has the merit of keeping disturbance to a minimum, of causing least offence to the general character of the city, and of enabling a useful stretch of road to be constructed in the foreseeable future should that become necessary. It also fulfils the condition that the relief road should be as near to the central streets as possible, and the Minister cannot see how any other route could achieve this.

"The Minister is therefore clearly of the opinion that if a central relief road has to be constructed, the route proposed in the plan is the one that should be followed; and he has decided to leave it as part of the approved plan.

"In view of the public controversy that has arisen over this particular proposal, the Minister thinks it important that the practical significance of his decision should be properly appreciated. Approval of the proposal shown in the plan does not confer any authority for the actual construction of the road. That is a separate matter which will only arise for decision at such time as a specific road scheme is prepared and submitted to the Ministry of Transport and Civil Aviation. The Minister is informed that there is no prospect of such a scheme being authorised at an early date: in any case it is made clear in the programming proposals, which are an integral part of the plan, that it is not intended to make a start on construction of the road before the second period of the plan, i.e., not until at least five years from now. Approval of the proposed route as part of the plan does not therefore carry with it any threat of early or irrevocable action.

"On the other hand, if the route is not left in the approved plan, there is the risk that development might be carried out within the next few years which

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Architects: Messrs. Seely & Paget, Chartered Architects.
Builders: Dove Bros. Ltd., London.

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would seriously prejudice construction of the road, and perhaps make it impossible to achieve without substantially greater disturbance. This is a risk which, in the circumstances, the Minister considers that it would be both imprudent and unreasonable to take.

"The practical effect of approval is therefore to enable the line of the road to be safeguarded during the next five years, at the end of which the statutory review of the plan will be due to take place. There will then be opportunity for the matter to be considered further before any final decision is taken on a scheme for road construction.

TRAFFIC STATISTICS

"Meanwhile the Minister will look to the County Council to arrange for the collection and study of current traffic statistics in the light of which the case for the proposed spine relief road may be examined afresh, including any further proposal for extension southwards of the route shown in the plan, so that the whole question may be dealt with at one and the same time.

"In this connection, he also invites the County Council to give further consideration to the siting of the bus station. He has decided that the proposal to establish a bus station on the site between Christ's and Emmanuel Colleges should be deleted from the plan. In doing so he has had in mind the probable effect of the noise and movement of traffic on the two colleges, and the doubts which have been expressed about the adequacy of the site for the size of the station which would be needed. He has come to the conclusion the siting of the bus station should be a proposal forming part of whatever proposals may be put forward for the completion of the spine relief road should it ultimately be decided to construct the road. If in the event it is decided not to construct the road the siting of the bus station must be reconsidered in the light of that decision."

OBITUARY

Edgard Frankignoul

WE REGRET to announce the death of M. Edgard Frankignoul, of Liege, Belgium, the immediate past-president of the International Federation of Building and Public Works.

M. Frankignoul was a frequent visitor to this country and had a long and distinguished career in the building industry. He was the inventor of the well-known Franki Pile.

He was president of the International Federation of Building and Public Works from 1948 to 1953 and at all times brought encouragement and enthusiasm to the work of the Federation.

M. Frankignoul was also past-president of the Belgian Federation of Building and Public Works and was well known to members of the National Federation of Building Trades Employers in the international sphere.

BOOKS RECEIVED

ENGLAND EAST. By Sydney R. Jones. (London: The Studio Publications.) Price 18s.

SOIL MECHANICS RELATED TO BUILDING. By J. H. G. King and D. A. Creswell. (London: Sir Isaac Pitman and Sons, Ltd.) Price 16s.

TOWN PLANNING DECISIONS

Tall Flats at Thames Ditton: Minister Refuses to Confirm Compulsory Purchase Order

ESHER Council's scheme to build a number of high flats on Palace estate land in Aragon-avenue, Thames Ditton, has been quashed by the Minister of Housing and Local Government, who has refused to confirm the compulsory purchase order asked for by the council. The council planned to buy the four-and-a-half-acre site compulsorily and to build blocks of five- and four-storey flats to provide 97 homes.

Their first plan had to be amended because the Ministry of Works objected to the height of the proposed five-storey block nearest Hampton Court Palace. The council reduced it to four storeys and the Ministry then gave its approval. Many adjoining residents objected to the construction of five-storey flats, but made no objection to the use of the land for houses.

Minister Allows Erection of 117 Bungalows on Rottingdean Site

THE Minister of Housing and Local Government has allowed the appeal of Haywards (Brighton), Ltd., against Brighton Corporation's deemed refusal to grant them planning permission to erect 117 bungalows on some 14 acres of land to the north of Eley Drive, Rottingdean.

At a public inquiry held to consider the appeal the Corporation agreed that the site of the proposed development was in an area allocated in the borough's development plan as being suitable for housing. Provision had been made for a strip of land about 150 ft. wide to be retained as an open space along the west side of Falmer-road and the council was satisfied that the development would make no difference to the character and amenity of Rottingdean. The reason why they had not given a decision on the appellants' application for planning consent was that they did not wish to pre-judge issues arising from the development plan before the inquiry, and because they knew there was strong opposition to the proposal.

On behalf of the appellants, Mr. Anthony Harmsworth submitted that his clients' scheme would provide a logical completion of development which had already taken place immediately to the south of the appeal site. The bungalows would be built at a density of about eight to the acre and, being in the valley, would be well below the ridge of the Downs. In view of the need for dwellings in the locality it would be unreasonable to delay building at a time when every effort was being made to provide houses quickly.

An objection by the Rottingdean Ratepayers' Association was put forward on the ground that when Rottingdean was brought within the boundary of Brighton it was on the understanding that the village would be preserved for all time in its downland setting. In the Association's opinion, development injurious to Rottingdean had already taken place and any future development, which in any case should be restricted, should be confined to compact blocks based on the three distinct communities of Rottingdean, Ovingdean and Wittingdean. Such physical separation was essential in order to avoid a continuous line of ribbon development. Any development of the appeal site would be a further step towards the linking-up of Rottingdean and Ovingdean with Wittingdean along the Falmer-road. The Association wished the land to be kept for agricultural use and they asked the Minister to defer any decision on the site until he gave his decision on the town's development plan.

In announcing his decision to allow the appeal the Minister states that while he appreciates the desire of the Rottingdean Ratepayers' Association to preserve the village and to safeguard it against undesirable development, he considers that the appeal land is suitable for housing and that the proposed development will in no way detract from the amenities of Rottingdean.

The Grange, Fulham, Saved from Demolition: Reasons for Decision

AS reported in our issue of September 10, the Minister of Housing and Local Government has informed Fulham Borough Council that he has decided, after considering the report of a public inquiry held in July, to confirm the preservation order which had been made in respect of The Grange, Fulham, a house built in 1713, which has many literary and historic associations. The council wanted to demolish The Grange, now Nos. 38 and 40, North End Crescent, and to build flats on the site.

In the course of his decision the Minister notes that the architectural interest of the houses and the long history of literary associations are accepted by all parties, and he must also take note of the number of houses rich in associations which have disappeared from London in late years—a fact which must increase the importance of those which are left.

He appreciates the council's concern to meet the housing needs of the borough, a need which was recognised by all parties at the inquiry. In earlier consideration of this conflict, between the need to preserve what is excellent of the past while providing for the housing requirements of the present, the cost to public funds of preservation of the houses has decisively weighed in the balance against preservation. The Minister, however, considers that the offer made by Capt. E. H. T. Broadwood, Master of the Musicians' Company, to purchase and restore the houses now provides a reasonable possibility of preserving them without a heavy charge on local and national funds.

He further notes that the preservation of these houses would still leave a substantial part of the building site, approximately one acre, free for the provision of flats and gardens to meet the council's needs, although the exact number of flats may still be uncertain. He considers that the demolition of the stables is not objectionable and might provide an access which would enable the rest of the site to be more successfully developed.

In all these circumstances the Minister has decided to confirm the building preservation order, modified to exclude the stables.

It is understood that an offer to buy the property has been made by Capt. Broadwood, but that the terms upon which the council would be prepared to sell have not yet been worked out.

American Housebuilding in Transition

2—SUPPLY OF FACTORS

We continue our extracts from "Housebuilding in Transition," by Sherman J. Maisel, Associate Professor of Business Administration at the University of California, published in England by the Cambridge University Press.—Ed.

ONLY part of the building process is determined by the housebuilder's own organisation. A significant part of it is shaped by his factors of supply—factors such as materials, labour, sub-contractors, financing, and land. The housebuilder's freedom of choice is limited by the availability of production factors he can purchase and the prices he must pay for them. Although he can select any particular mixture of available factors he desires, the final product he offers the public is as much influenced by the supply schedules offered to him as by his own decisions and organisation.

Most discussions of housebuilding stress the importance of this role played by the factor suppliers in the structure and efficiency of the housebuilding industry itself. Many previous studies have argued that efficiency in housebuilding cannot be improved until a solution is found of the problem of control by suppliers over building processes.

MATERIALS

The fact that 40 per cent. of the selling price of the small builder's typical Bay area house is expended for materials purchased by the builder and his sub-contractors dramatizes the predominance of the materials factor in the supply picture. The efficiency and organisation of the materials-supply industries have an important bearing on the efficiency and organisation of the housebuilding industry.

Studies of the building materials industries have tended to be very critical, but they have often been superficial, lacking detailed and accurate data. One source of this hostility was the price situation, in which many building materials prices seemed to be administered and rather inflexible. Furthermore, charges of monopoly and restraint of trade have been brought against building materials firms, with decisions in many cases won by the government. These suits have been directed against control of patents, basing point systems, joint selling agencies, and illegal use of trade associations.

This discussion is restricted to three areas in which sufficient data are known. The first is the type of industries producing building materials and particularly the type of market control existing within them. The second is the number and variety of the local channels of distribution for building materials. The third is the recent price history of building materials. Rather than covering all the hundreds of possible products which might be used in a building, this description concerns the 23 major industries, as defined in the Standard Industrial Classification of Manufacturing Industries, which furnish the principal items entering into Bay area houses.

One approach to the problem of these industries is through a consideration of their markets. Recent discussion indicates that market control and characteristics are strategic in explaining differences in competitive and price behaviour. This appears to hold true in the building materials industries. Those which have similar market characteristics follow like paths in competition and price patterns. All building materials are, of course, producers' goods, and the amount of product differentiation is slight. Several carry brand names, but they disappear into the final unit and are not known to the ultimate purchaser.

By means of data recently made available on the ratio of concentration of output in industries, it is possible to classify building materials producers in accordance with their degree of market control. It appears from this classification that housebuilding materials are produced in far less concentrated industries than most industrial goods, and consequently firms producing them have less than an average degree of market control.

Lumber, millwork, building paper, cast-iron pipe, paint, lighting fixtures, bricks, and furnaces and hot water heaters—items making up 60 per cent. of the cost of the building materials going into a Bay area house—all come from industries in which the eight largest firms controlled only minor proportions (less than 36 per cent. in 1947) of total production. These industries produced more than half the value of output of the 23 industries making housebuilding materials.

COMPETITION

In each of these industries with a low concentration of output, competition has been relatively intense. Prices have varied and have tended to fluctuate rapidly. Attempts to diminish competition have been made primarily through trade associations. Except in shortage periods, they have not been very successful. In most of these industries, large builders can and frequently do enter into the fabricating end themselves. As a result, they can combat restrictions directly. Whether for this or other reasons, builders report that effective competition exists in most of these industries.

Industries for which the national concentration ratio is low, but which produce primarily on a local or regional basis include cement, lighting fixtures, and bricks. The latter is particularly typical of this group. Whereas the country's eight largest bricks firms control only 17 per cent. of national output, the six brick manufacturers in the Bay area—and there are only six—control 100 per cent. of local production. Because of high transportation costs, competition from distant producers is negligible. Industries in which a variety of products is manufactured at different levels and in which the concentration ratio may consequently not be significant include steel water pipe, sheet metal, electrical wiring, and warm-air furnaces and hot-water heaters.

Removal of these seven regionally concentrated and mixed-product industries from the previous totals causes no important change in the general picture. Altogether they make up only 14 per cent. of the materials going into the typical house and 29 per cent. of the value of all building materials manufactured. Even excluding these industries producing 14 per cent. of a house's materials because they are local or special cases, 74 per cent. of the materials going into the house still have a concentration ratio of less than 70 (51 per cent. less than 30) and only 12 per cent. have a ratio of more than 70.

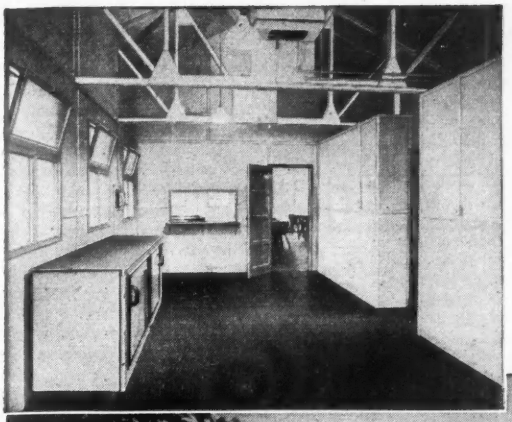
The industries in which concentration is high and entry appears to be difficult include gypsum with a concentration ratio (eight firms) of 94 per cent.; plumbing fixtures, 82 per cent.; window shades, 83 per cent.; linoleum, 94 per cent.; window glass, 98 per cent.; and ceramic tile, 70 per cent. These make up less than 12 per cent. of the materials cost of the house. Close behind these is roofing material, whose concentration ratio is 65 per cent. Its market behaviour is similar to the more concentrated group. Most of these high concentration industries would be considered oligopolistic, and observed market results appear to follow the pattern found in other goods with concentrated control—relatively stable prices, use of basing points, strong distributor tie-ups, and the like.

Finally, there are the items whose concentrations fall in between the high and low concentration groups. These are primarily steel products and also electrical supplies and building hardware. They follow a mixed market pattern. Mill prices on these items are usually regulated, making it difficult for builders to obtain discounts at that level. On the other hand, their distribution — through jobbers, wholesalers, or direct from the mill—is far more flexible, so there is variation in delivered prices, and the bargaining power of the individual builder helps to determine his delivered price.

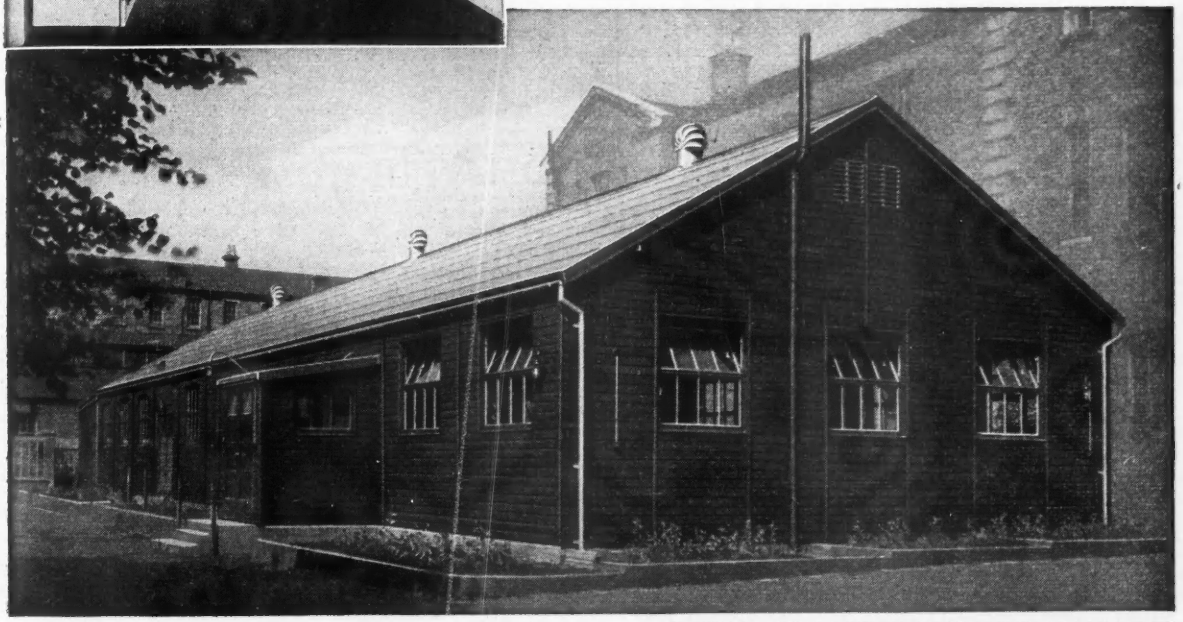
DISTRIBUTION

Differences in the market control of building materials are frequently reflected in the second area under discussion—distribution channels. Most important in this area are the materials dealers who furnish goods to the small builders and trade contractors. These are called either retailers or wholesalers, depending on their particular line. But irrespective of the name, they generally perform the same functions. They receive car lots from the manufacturer, store them, and deliver the desired quantity to the contractor at the site of construction. They may or may not also sell over the counter to individuals.

Another group which sometimes appears in the chain of distribution comprises the brokers or wholesalers who sell to materials dealers and occasionally to the large builders. In certain cases they own warehouses and carry stocks. For example, in speciality millwork and hardware, where the materials dealer does not use enough of certain items to make carload purchases, a wholesaler handles the assembling and stocking of the items. In other instances, the wholesaler is a mere broker or salesman, taking the place of direct factory agents. He does not accept title, furnish warehousing, or perform any similar functions. His pay must be competitive with the cost to the factory of performing this function through its own staff. Margins paid to the broker for the performance of these services normally



Wide-span timber buildings



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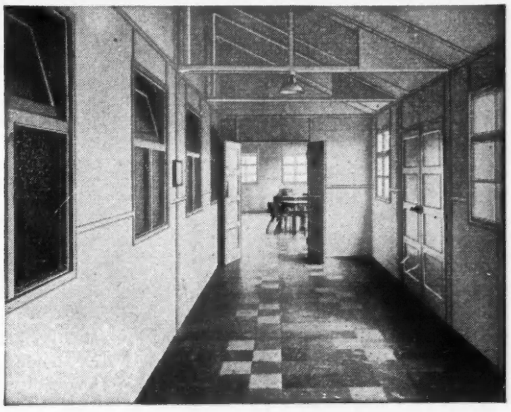

(CENTRE) Nurses' Recreation Room, 30′ span x approx. 100′, for Paddington Hospital, London. Illustration shows how porches or lean-to extensions can be easily arranged. (Photo : courtesy Paddington Hospital Management Committee.)

(INSETS) These show Hall's prefabricated partitions and standard lining to walls and underside of roof. (Photos : courtesy No. 10 Group B. Wakefield Hospital Management Committee.)

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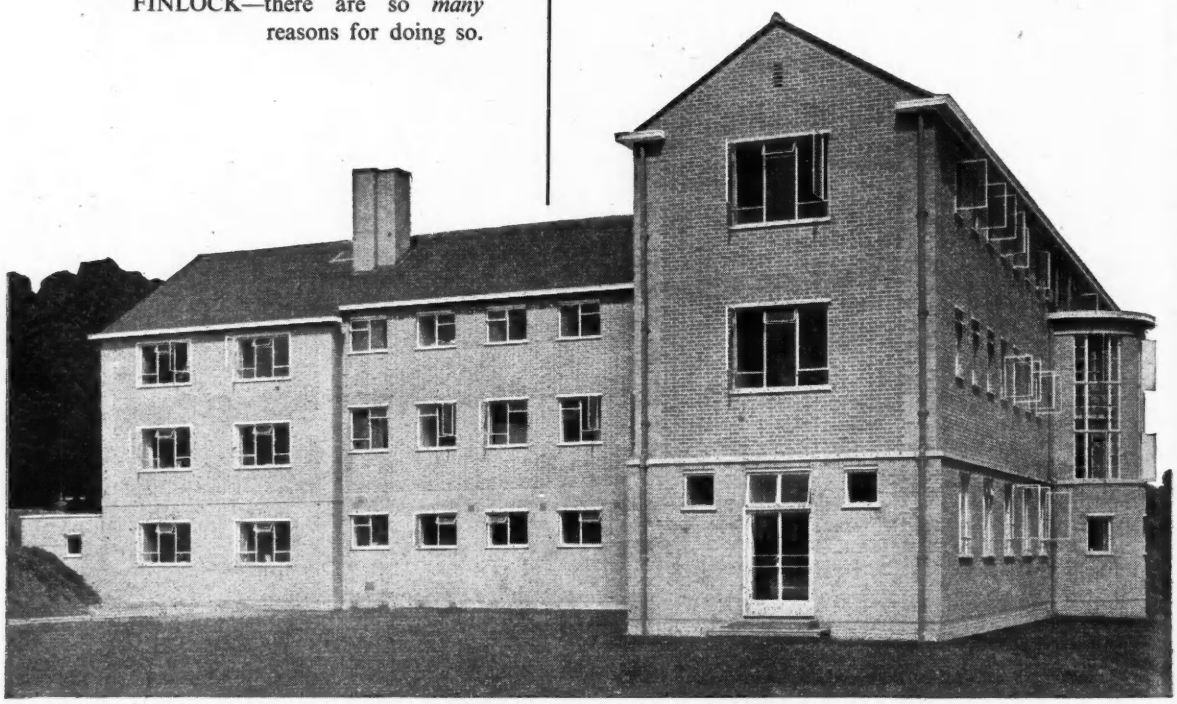

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run from three to five per cent., rising to eight or ten per cent. on items which the wholesaler carries in stock.

The business of these San Francisco area wholesale dealers was not, of course, confined to selling to house builders. In several lines, such as electrical supplies and hardware, sales for installation in new houses made up only a minor part of the dealer's total business. In other cases, however, many wholesalers in particular lines did most of their business with builders or trade contractors.

In addition to buying through wholesalers, many builders bought from retail lumber, hardware and building materials dealers. At the other extreme, some of the largest builders bought directly from mills.

The number of possible sources of supply for most items had an important bearing on the actual channels used by builders and on the prices they paid. The more sources a builder has available to him, the less likely it is that uneconomic methods of supply will continue to exist. Where numerous alternative sources of supply exist, it usually requires illegal collusion to maintain inefficient systems, and where the number of firms involved is large, it is difficult for illegal practices to be carried on successfully. The large total number of sources, however, is not in itself a guarantee of alternative sources for each material. The number of wholesalers of a product is related directly to the number of producers of that item. Products stemming from highly concentrated industries were likely to be distributed through a minimum number of trading units, whereas items originating among a large number of producers were likely to be channelled through a similar proliferation of distributors.

Costs of building materials have depended upon the type of industry from which they were drawn. Relative price changes for these supplies have been determined by the kind of material going into the product, the importance of raw materials compared with plant and labour costs, and the competitiveness of the particular industry. These elements have also affected the particular building material industry's ability to expand. The less competitive industries generally have been those using materials which require more work to be done in plants and furnish more highly fabricated products. Because of fixed plant costs, they have expanded more slowly, and their prices have been more stable, but there have been occasional shortages and resultant black or grey markets for these goods. The more competitive industries have been those furnishing goods in a form closer to the raw material. These have expanded more rapidly, and their price fluctuations, moving in accordance with those of other raw materials, have been wider. Also, there has been a somewhat more elastic supply.

Most vivid is the manner in which lumber prices have differed from other wholesale prices. Lumber prices have moved in a far more volatile manner than other prices, and since 1940 they have become relatively much higher. Lumber has had large demand fluctuations, and it is produced in a very competitive industry, falling between farming and mining in its mode of production. Some lumber comes from large commercial operations in which the basic cost is labour and stumpage. Some comes from individual farm wood lots.

The impact of large demand changes on lumber is similar to that on many farm products with resultant wide price fluctuations. At the same time, a greater rise in price has occurred because of a rapid increase in rates paid labour, together with a decrease in accessible stands of trees. As a result, lumber prices have fluctuated sharply, but around a steadily increasing level. Lumber prices rose by 250 per cent. in the decade of the 1940's—the largest increase for any major commodity.

Other building materials are produced in industries whose price movements differ but little from the average of the economy. The price fluctuations for these other materials have not varied much from those of other commodities except in the two periods when building demand rose more rapidly than general demand. From 1932 to 1937, other building materials rose more slowly in price than the total wholesale price index, but somewhat faster than non-agricultural products. From 1937 to 1947 these materials again rose more gradually than the total index, but at the same rate as non-agricultural products. Then from 1947 through 1951, as a result of the concentrated increase in construction demand, the prices of building materials, excluding lumber, rose at a more rapid rate than did those of other commodities.

Price movements of these other house building materials fall between those of lumber and those of all other materials. Since lumber represents nearly 40 per cent. of the total cost of housing materials, it is plain that building materials as a whole have risen far more rapidly than wholesale prices in general.

THE TRADE CONTRACTORS

Next in importance to building materials as a supply factor in house building is sub-contracting, which accounts for almost half the builder's direct costs. Thirty-six per cent. of the final sale price of the typical house is paid to the sub-contractors.

Many writers have denounced the sub-contracting system as a hindrance to the development of efficient construction methods. Although co-ordination of sub-contractors' work does at times become troublesome, the system is thought to be more efficient by even the largest builders than the alternative policy of integration, under which the builder would attempt to handle the specialised jobs himself. Integration remains very rare at all size levels.

Assuming, therefore, that sub-contracting is more efficient than integration, there are two aspects of the actual working of the system to be considered here: (1) the structure of the trade contracting industries and the relative bargaining strength of the builder *vis-à-vis* his trade contractors; and (2) the manner in which the trade contractors perform their tasks.

No one has known how many trade contractors there are, which types are the most numerous, what the size of their business is, how they divide their work between house building and other activities, or how they operate. In order that information might be obtained on these fundamental points a special survey of trade contractors in the San Francisco Bay area was conducted. Because of cost limitations, the survey covered only five of the trades which work on houses. These trades, however, contained a majority of all licensees and accounted for about 72 per cent. of the cost of subcontracts for the typical house.

About 75 per cent. of all firms holding trade contracting licences indicated that they were actively working in the trade as a separate proprietorship, partnership or corporation. The remainder of licence holders did not use their licences; they were retired, working for others, or working in other trades. Statements here about the number and attributes of trade-contracting firms are based on the percentage reporting active use of licences. The picture which develops is one of firms very similar to house builders themselves, with related problems of size and methods.

By far the largest category of trade contractors is painters. It accounts for 36 per cent. of the outstanding licences and nearly as high a percentage of active firms. Next most numerous are plumbers, with about 11 per cent. of the licensees, and electricians with the same percentage. Following this in terms of licensees come the plasterers and roofers, with about 6 per cent., and the ceramic tilesetters with about 4 per cent. of the total. The masonry, wood flooring, sheet metal, and cement and concrete firms each have between 3 and 4 per cent., and the excavating, landscaping, and warm-air heating specialists claim between 2 and 3 per cent. Finally come the cabinetmakers, glazers, lathers, sewer installers, and soft tile and linoleum workers, each with less than 2 per cent. of the total.

The various types of trade contractors have been divided into four groups according to the total annual volume of business reported: (1) smallest firms doing less than $10,000 in volume (these are primarily one-man firms doing repair and maintenance); (2) small firms whose volume was between $10,000 and $50,000; (3) medium-sized firms with business running between $50,000 and $200,000; and (4) large firms which top that amount.

Important variations exist among trades. Most conspicuous is the average size of the painters, half of whom are in the smallest category, as compared with about 20 per cent. for the other trades. Floor-laying has nearly as high a percentage of small firms as painting, though a far lower one in the very small group. The cement and concrete contractors and the plumbers have the largest percentage of very large firms. These distributions are directly reflected in each group's median volume, which ranges from $10,000 for painting and $24,000 for floor-laying, to cement and concrete at $37,000, masonry at $38,000, and plumbing at $41,000.

DOLLAR VOLUME OF WORK

Dollar volume as a measure of size has the disadvantage of being affected greatly by the magnitude of purchases made by the firm. This is a business component which varies according to the type of work done. For example, the painters' materials cost relatively only half as much as those of the other trade contractors; consequently their size appears small on the basis of dollar volume, but less small when based on a measure more nearly reflecting actual work, such as labour. For this same reason, trade contractors

appear small in comparison with builders when measured by dollar volume. Since the builder's sale price includes payments for sub-contracts and land, his dollar volume per employee is relatively high. Only 38 per cent. of builders have a volume less than $50,000 as compared with 71 per cent. for trade contractors; 45 per cent. of builders have a medium dollar volume compared with 19 per cent. for the sub-contractors; and 17 per cent. of the builders are in the large category as compared with 10 per cent. of the sub-contractors. The number in the largest group with a volume of more than half a million does not differ greatly. The median volume for all builders is about $72,000, or more than twice as high as the median volume for trade contractors.

If the number of employees is used as a measure of size, the relationships among trade contractors appear slightly altered. Such a distribution brings out, too, the prevalence of firms with no employees, in which the owner does all the work himself. Firms with fewer than five employees may be considered as small. By this measure, the disparity between the painters and the other trades diminishes. On the other hand, the masonry contractors have an even greater concentration in the larger-sized groups. Based on employment, the size distribution of builders and trade contractors is roughly similar. Omitting painters, the majority of whom are engaged in repair and maintenance work, and considering only firms active in house building, it is found that trade contractors usually have more employees and are somewhat larger on the average than the builders.

The number of small trade contractors is not surprising, but it is economically significant, when coupled with the large number in each trade-contracting group. It indicates the possibility (and also probability) of competition with fairly equal bargaining power. The large number of small trade contractors also indicates the possibility of large builders being able to bargain with fairly small subs. This is a major factor in making non-integration cheaper than integration.

The generally high correlation in size of firms by both dollar and employment measures, as well as the somewhat lower volume of business per employee in painting, is illustrated again when painting contractors and cement and concrete firms are cross-classified by dollar volume and number of workers at the site. In cement and concrete, firms with a volume of business less than $10,000 all consist of self-employed workers acting as trade contractors with no other employees. In the painting business, though most of the smallest firms are also simply self-employed mechanics, in about a third of the cases small employers do have an assistant working with them. This same tendency of painting firms with a given volume of business to have more employees than contractors in other trades is noticed throughout the field.

About a third of the active trade contractors in the area do little or no work on new houses, about 26 per cent. concentrate 70 per cent. of their work primarily in the new housing field, whereas the remainder have their work spread evenly over both fields with the importance of housebuilding in their total volume varying from 10 to 70 per cent. Conversely, about 36 per cent. of the firms concentrate primarily on repair and maintenance, about one-fourth do no repair and maintenance work, and the remainder spread their work over both.

Translating these percentages into the number of active trade contractors in the area shows that about 1,100 trade contractors concentrate most of their effort in housebuilding, about 1,300 do mainly repair and maintenance, and the remaining 1,200 split their effort between the two types of work. This means, then, that there are about as many trade contractors active in housebuilding as there are housebuilders. Each trade contractor works on many more houses than each builder, but puts in correspondingly less work per house.

The importance to housebuilding of various-sized firms in any category of trade contracting depends upon the relative volume of work on new housing compared with remodelling, repair, and maintenance jobs and with non-residential building performed by the trade as a whole. In addition, the type of organisation and skill required to do large commercial, institutional, or industrial jobs will affect the size of firms.

(To be continued.)

REBUILDING THE CITY

Comprehensive Plan for a Forty-acre site

ACTING on behalf of a committee of public men under the chairmanship of Sir Gerald Barry, a group of three architects, headed by Mr. Sergei Kadleigh, ARIBA, have drawn up an ambitious plan for the comprehensive redevelopment of a large area of the City of London. The area concerned, which suffered some of the greatest devastation of the war, is known as "New Barbican," and is 40 acres in extent; it lies between Aldersgate and Moorgate and the proposed new road "Route 11" and Barbican.

The New Barbican Committee, as it is known, hopes that the proposals will find favour with the City Corporation and other authorities concerned. An outline of the scheme has been submitted to the City Corporation, whose consent will of course be necessary if it is to be put into effect. Plans and drawings of the scheme will not be ready for publication for several weeks, but the committee decided to make a public announcement of its plans at this time as it felt that the eleventh hour has been reached in the controversy over what form redevelopment of the City of London should take. Any further delay might have proved fatal to an essential feature of the scheme, the forestalling of any piecemeal development in the area in question.

The scheme is utilitarian, industrial, residential and artistic in its conception, and would largely depend for its financial success upon the multiple use of the land available. To this end the entire site, with the exception of those parts occupied by railways, and the surviving historic buildings, which would be preserved, would be excavated to a depth of 60 ft. below ground level. It is proposed to fill the excavation with four-storeyed warehouses and to accommodate light industries. Above, at ground level, blocks of office buildings, flats and terrace houses would be built. Service roads, rising to 45 ft., would be constructed, and there would be green open spaces and perhaps a new city hall and hotel near that part of the old Roman wall which is still standing. Here, too, it is thought, the halls of those City Companies in the area which were destroyed in the war could be built. Altogether, the site would be planned to provide a variety of elevations.

The excavation of so large an area has been made possible, Mr. Kadleigh told *The Builder*, by the great strides since the war in the development of heavy earth-moving machinery, and in drawing up their plans the architects have borne in mind the need for making full use of such machinery. Furthermore; British Railways are understood to have stated that removal of the spoil could all be undertaken on the existing lines that cross the site, and consequently this operation would not increase the congestion of the City's streets.

A TRADING CENTRE

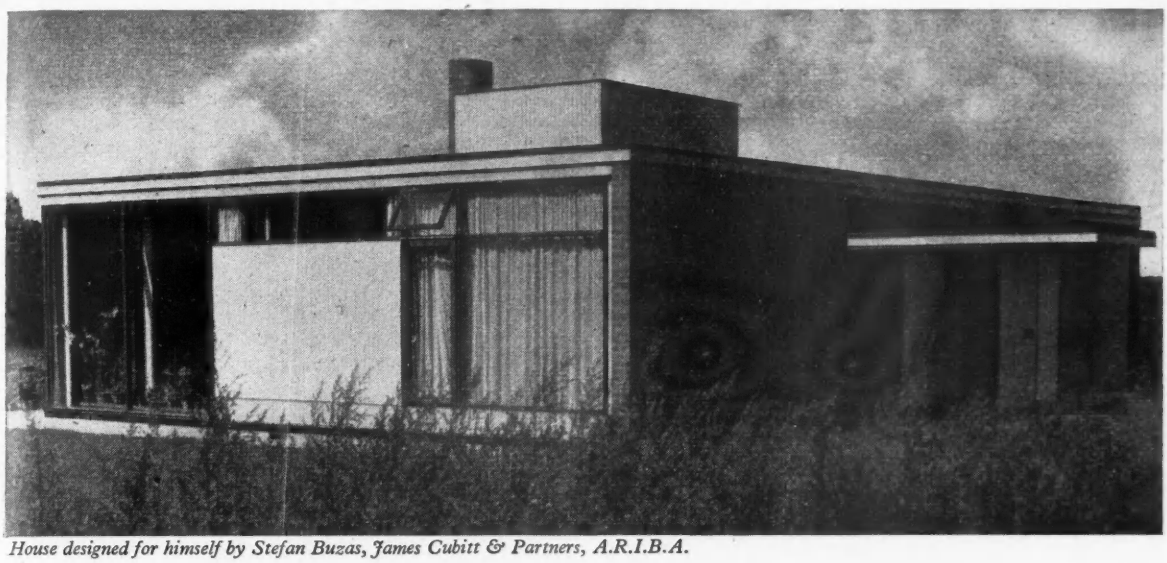
Those living in this proposed residential area of the City would have their work and amenities within walking distance of their flats and houses, a point which has already found favour with London Transport and the railways. Shopping centres, schools and cinemas would be provided. There would be two railway stations at either end of the area (on the Metropolitan line) and perhaps buses running along the new main road. Beneath the buildings a car park would be constructed which would be available for several thousand vehicles. It is planned to make the New Barbican a great trading centre as in days gone by, but without the inconvenience and congestion which have hampered the movement of goods and vehicles in recent years.

The sponsors of the scheme believe that it is no idle dream, but an essentially practical and economic proposition. The architects see in it the first opportunity in this country to apply in the problem of rebuilding our cities the achievements of modern engineering on an economic scale. Indeed, it would only be by the employment of new techniques that the scheme could be completed economically and in a reasonable length of time.

Associated with Mr. Kadleigh in preparing the plans are Mr. William Whitfield, ARIBA, and Mr. Patrick Horsbrugh, ARIBA.

AUSTRIAN ARCHITECTS' VISIT

The British Council has arranged a week's programme for a group of 43 Austrian architects and town planning experts who are visiting the UK from September 12 to 19. The object of the visit is to study the administration and industrial development of housing estates and new towns and they are visiting the LCC Lansbury estate and the new towns of Crawley, Harlow and Hatfield. The group is led by Dr. Fritz Kastner, of the Austrian Institute for Country Planning, and includes architects and town planning experts from Vienna and other Austrian cities. The cost of the visit is being met from Austria.



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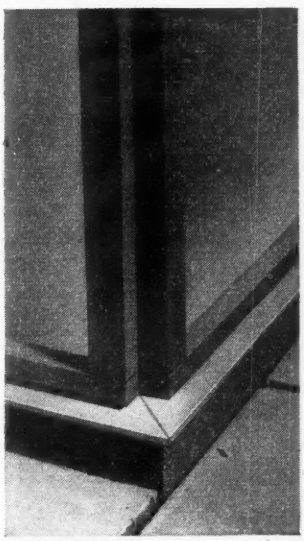
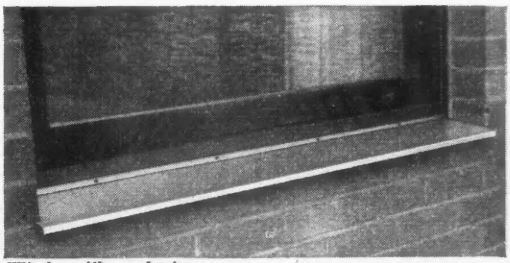
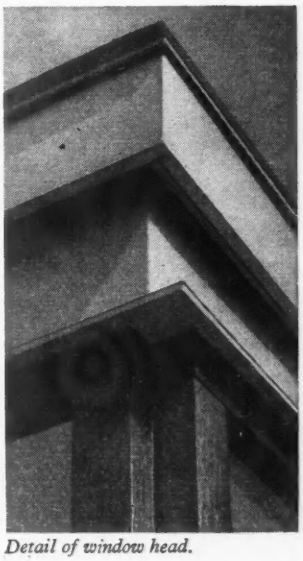


Corner detail.



Window sill weathering.

Detail of roof verge.



Detail of window head.

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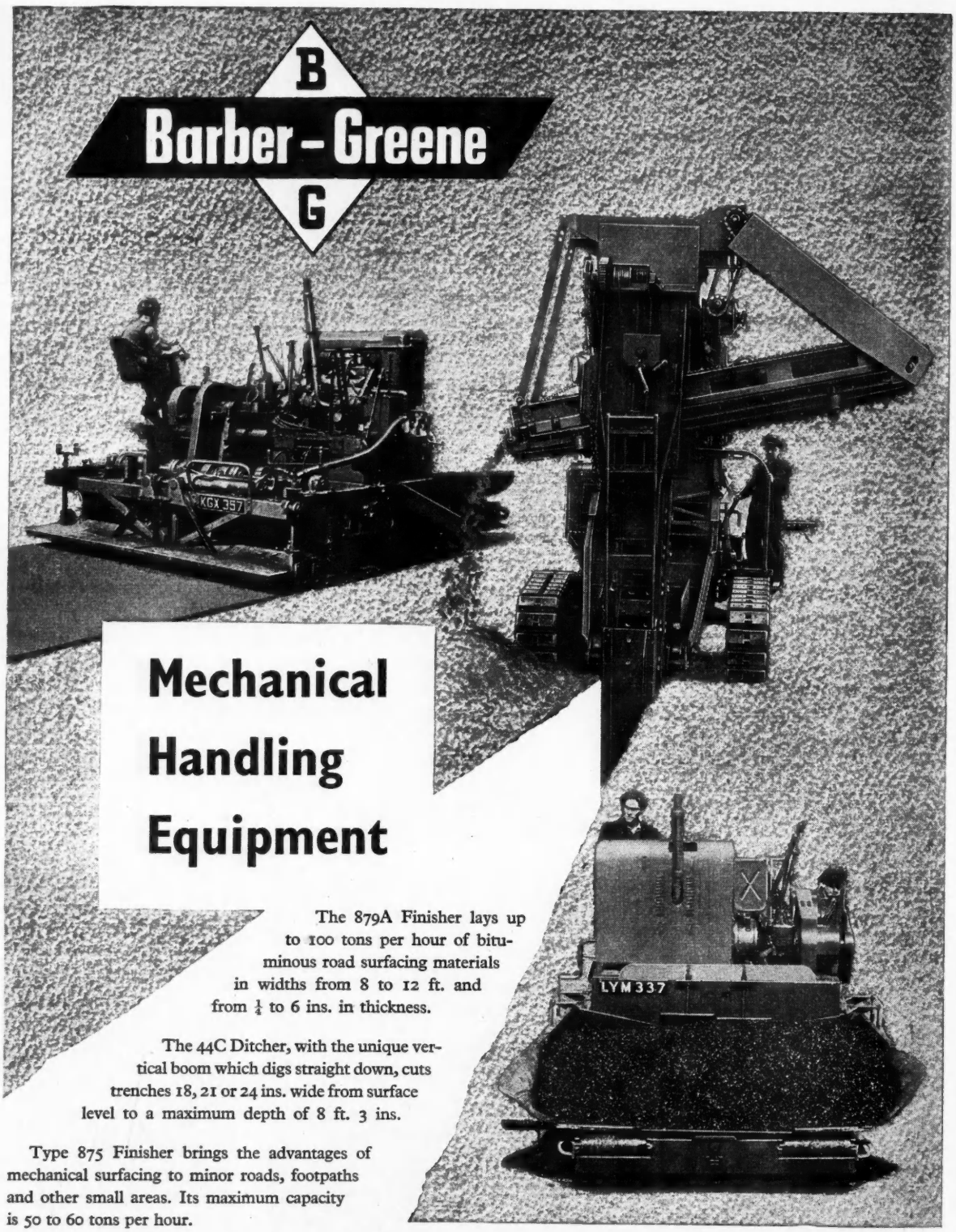

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TOWER CRANES IN THE NORTH-WEST

Results of Inquiries by the Technical Information Section of the Ministry of Works

THERE is no doubt that the tower crane is a very useful tool on a building site. Many different types of mechanical plant for handling materials have come into use in recent years—mobile hoists, powered barrows, concreting skips—but the tower crane is the only single piece of plant which will handle materials both horizontally and vertically. It can unload materials from lorries and, where appropriate, deposit them on the scaffold just where they are wanted, thus avoiding double handling to and from the stockpile. This is an obvious advantage, particularly on very restricted sites. It can handle any materials, if suitable containers and slings are used and, within the capacity of the crane, any type of component or constructional unit which may be prefabricated on the ground.

Careful planning and phasing of the building programme and efficient organisation of the work on the site make it possible to achieve the maximum saving of man-hours and money in handling materials and overheads. This has been proved in the report by the Building Research Station on the use of a tower crane on a housing site at Norwich.*

To what extent has the tower crane won the approval of the building industry? Inquiries have been made in the north-western area to find out the kind of jobs on which tower cranes have been used, and to obtain the opinions of builders using them.

* "House Building with a Tower Crane"—*The Builder*, July 17 and 24, 1953.

HOUSING

At Timperley, 88 traditional houses were built for the borough of Altrincham with the help of a tower crane. The site was divided into five sections, and all foundation work, including concreting and placing of hardcore, was done by an excavator fitted with a crane jib. The tower crane was then brought into action with a clear run. External brickwork was carried up to first scaffold height, then internal brickwork was built up to the same height while the external scaffold was erected and loaded. External brickwork was then carried up to first floor, while portable internal scaffolds were placed in position by the crane and loaded. Internal brickwork was next continued up to first floor, while the external scaffold was again lifted and loaded. This procedure continued up to wall-plate level.

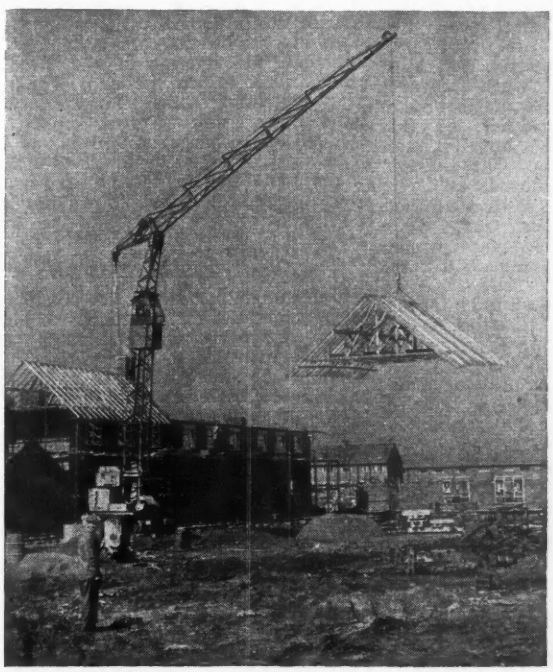
Twelve bricklayers were employed on the superstructure with one labourer to receive the 160 bricks and the 10 cwt. skips of mortar as required. Concrete lintols, which sometimes take six men up to 30 minutes to lift and place by hand, were hoisted and placed by the crane in a matter of three minutes each. Joists were also lifted and laid in minutes by the crane team, levelling only being left to the joiners.

Roof timbers were cut and trusses bolted up in the joiners' shop on the site. The timber roofing for each house was prefabricated on the ground and hoisted complete and placed in position by the crane (Fig. 1). Three joiners completed three roofs per day in this way. Roofing tiles were unloaded from the wagons on to pallets, 550 tiles on each pallet, and were then ready for hoisting and placing conveniently for the tilers. Every pallet lifted on to the roof saved the labourers 25 journeys up the ladder with tiles on their heads in the conventional manner.

Tower cranes were used on two sites at Wythenshawe for the Manchester Corporation. One of these was a contract for 11 shops with 11 two-storey maisonettes over them, having brick cavity walls, precast concrete floors and timber roofs. The other was for 72 flats in eight blocks of nine, three storeys high, also having cavity brick walls, with reinforced concrete floors and low-pitched timber roofs. Both jobs were built by the same contractor, and operations were planned to keep the cranes working to full capacity from foundations to roof. Opinions expressed on these sites testified to the smooth running and efficiency of the cranes, and operatives liked them because they made work easier.

EDUCATIONAL AND PUBLIC BUILDINGS

At Netherton a tower crane was hired for use, as an experiment, in constructing the new grammar-technical school for boys. The school is a two-storey building and has reinforced concrete frame and floors, and external brick cladding with stone dressings. The normal programme on the site was modified to make the best use of the crane, but the job was not designed round the crane. The contractors did not expect to make any large savings in cost, partly because the crane hire and erection charges were rather high, and partly because of the difficulty of

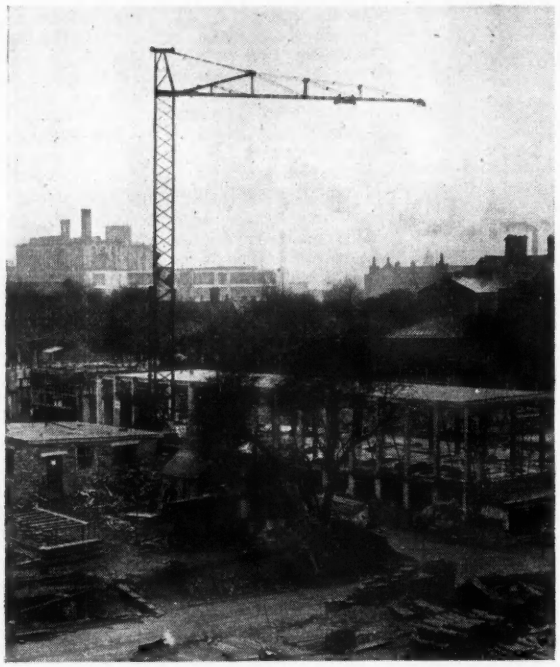


Photo, Eric Entwistle, Ltd.

Fig. 1.—Prefabricated timber roofing being hoisted into position during housing work at Timperley, Cheshire.

Photo, Crown Copyright.

Fig. 2.— An example of the usefulness of a tower crane on a congested site—a telephone repeater station at Chester.



Photo, Leonard Fairclough, Ltd.

Fig. 3.—This photograph illustrates the large area that can be served by a tower crane; it shows Wigan technical school in course of construction.

Photo, Crown Copyright.

Fig. 4.—Another example of a tower crane on a restricted site—a warehouse under construction at a building site in Manchester.

ensuring an uninterrupted run of work. They found that the cost of power and oil was low—£2 per week—and the crane was ideal for lifting and accurate placing of the materials.

A firm of contractors at Liverpool owned two tower cranes, and the fact that they ordered a third, costing over £4,000, shows that they appreciate the usefulness of these cranes. They consider that they are very remunerative when used on the right type of large contract, but they are doubtful whether they would pay their way on housing work, other than for building long terraces. Jobs on which they used a tower crane include the new Corn Exchange and the Research and Development Laboratories at Liverpool, and a telephone repeater station at Chester. The research laboratories are built of load-bearing brickwork with reinforced concrete basement and precast floor units. The repeater station is an interesting example of the usefulness of a tower crane on a congested site (Fig. 2). The crane track was cantilevered to carry the nearside rail over a retaining wall close to the new building. Only part of the wall was in the design and included in the contract, but the contractors continued the wall at their own expense to accommodate the crane. The structure has reinforced concrete frame and floors with brick cladding to walls.

DERRICK CRANES UNSUITABLE

The main buildings of the new Secondary Technical School and College of Further Education at Wigan are constructed of precast concrete units with some prestressed concrete beams and structural steelwork. There are both *in-situ* and precast floors. Lack of space and the varying heights of buildings made the site unsuitable for using a derrick crane, although much time was spent in plotting the positions and moves which would have been necessary if it had been used. In the end it was decided to use a tower crane (Fig. 3). The crane replaced all hoists, etc., and in addition to placing poured concrete it lifted steel joists, precast concrete units, reinforcement, shuttering, bricks and so on, and also lifted the concrete mixers when a change of position was necessary. Some of the shuttering was prefabricated on the ground, and reinforcement built up, and then hoisted into position. The job was arranged so that the crane was kept going all the time. It is estimated that labour and maintenance costs were roughly one-third of what they would have been if a derrick crane had been used.

To enable the front of a church in one of the main streets of Preston to be repaired, the facade had to be supported by shores and steel scaffolding. On a very confined site such as this, the main problem to be considered was how to lower large stone units to the ground. A derrick crane would have had to be raised well above the ground to get jib clearance. It was also important that the minimum of road space should be occupied and that traffic should be interrupted for as short a time as possible. A tower crane was hired, and it proved to be the perfect answer to the problem. The street was closed only during the working period; at other times there was room for one line of traffic. Had a derrick been used this would not have been possible, and the job would have taken twice as long and cost at least twice as much.

A somewhat similar job, for which a tower crane proved to be the ideal tool, was the dismantling and rebuilding of the clock tower and cupola of the old town hall at Lancaster. Stone columns to be lowered weighed 15 cwt. each. Owing to the very confined space in the adjoining streets and square, it was thought that a derrick crane would have to be erected on the roof adjoining the pediment, the interior of the building being strutted to take the load. The high cost of doing this, however, was avoided by using a tower crane. A nominal hire charge was made, as the occasion was used to demonstrate the use of the crane; and invitations were issued over a wide area to people to come and see it working.

GENERAL CONCLUSIONS

Unfortunately it is not yet possible to say much about the economics of using tower cranes. On building jobs generally there are so many variable and unpredictable factors that it is difficult to analyse costs completely and to identify with certainty the precise reasons why costs were high or low for any particular operation. Comparisons of costs of similar jobs on different sites tend to be even more unreliable. So far, it has not been possible to estimate, for any of the jobs described, what savings, if any, have been made. But, in any case, the fact that a crane saved costs on a job does not necessarily mean that the same saving is likely to be made on a similar job. Opinions expressed by owners of tower cranes, and by their representatives on sites where they have been used, agree that the tower crane is a very versatile and useful tool and that whether or not it produces any considerable direct saving in costs it can certainly

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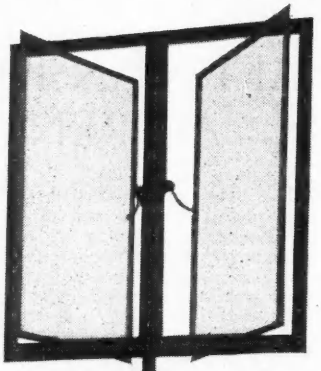

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When it is decided to use a tower crane on a site, the work must be organised round the crane to keep it working full time, otherwise it will "eat its head off." Nevertheless, such intensive site organisation is itself a good thing, and is perhaps one of the most important results of using a tower crane.

To sum up, the following are some of the advantages of using a tower crane:—

It occupies little space and can be sited close up to a building without reducing its area of effective operation.

It can handle any type of component or constructional unit including large sections prefabricated on the ground and, if suitable containers are used, any kind of building material.

It can pick up from lorries or from central dumps and deliver direct to the point where work is actually proceeding without double handling.

Its versatility enables it to take the place of several items of plant normally in use at one time, e.g. small hoists, derrick cranes and powered barrows.

It reduces the number of handling teams and, for many operations, requires no separate banksman.

Although its capital cost is considerable, maintenance and running costs are low; hire charges vary.

Savings can be effected in specific operations, in the amount of other plant and equipment needed, and in overheads which depend on the time taken to complete the job.

Economic use depends on keeping the crane fully employed; this involves careful dovetailing and timing of operations.

Delays are more serious than in ordinary conditions, but it is to everyone's interest, including that of the operatives, to prevent them.

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THE MODULAR SOCIETY

THE following programme of visits and meetings has been arranged by the Modular Society:— *September* 25.—Visit to the Arcon Prototype Site at Southall. *October* 14.—Visit to Coventry and joint meeting with the Coventry Society of Architects. *October* 30.—Visit to houses at Basingstoke. *November* 17.—Annual general meeting. According to the Society's articles of association one-third of the members of council retire at the annual general meeting and their places are filled at that meeting by an election at which members and subscribers present each have one vote. Candidates for election must be proposed in writing to the secretary, together with their written consent to serve, by a member or subscriber between the dates October 19 and November 12.

January 5, 1955.—Paper to be read by Mr. Bruce Martin, ARIBA, of the British Standards Institution. *March* 23.—Paper to be read by Mr. William Allen, ARIBA, of the Building Research Station.

STREET LAMP PROTECTION

Experiments are taking place at St. Helen's with a new type of toughened glass for street lamps to cut down the amount of damage caused by vandals. This glass has already reduced injuries from flying glass when damaged by youths throwing stones.

RURAL HOUSING

Priorities for Improvement of Old Cottages

By B. S. Townroe, OBE, Hon. ARIBA

OFTEN in the past few years the President and Fellows of St. John's College, Oxford—my own college—have spoken to me about the problems of college property in rural areas. Many of their cottages were built years ago, and had become unfit even before the war, and, of course, their condition became worse during the war owing to overcrowding and billetting. Rent restrictions have made it difficult to carry out adequate repairs. There has also been the difficult problem of the farm workers living in tied houses—to say nothing of the sub-standard families, bluntly called on the Continent "undesirable tenants."

In view of all these difficulties, the college appointed as their housing manager Miss Alison Clay. This lady has acquired special knowledge of rural housing, and some of the suggestions which she made in an address given to the Society of Housing Managers at their Conference in Oxford earlier this year will be of special interest to builders, especially to those concerned with building repair work in rural areas.

TIED HOUSES

Miss Clay's experience is that some farmers welcome their landlord keeping an eye on the tied farm cottages, and that even if the farmers are indifferent, the tenant welcomes the interest and help of the landlord. Of course, often the tenants take advantage of the low rents and in many cases have themselves put in modern grates, ranges and a hot water system. But Miss Clay points out that under the new Housing Repairs and Rents Act it will be a little easier to carry out some repairs, although, of course, the Act is only a temporary measure. But where improvements can be carried out 8 per cent. of the cost can be added to the annual rent. Miss Clay suggests the following priorities for improvement to the older country cottages:

1. A kitchen sink with a drain—if necessary, a soakaway.
2. Water to be laid on to the sink.
3. A modern solid-fuel cooking range.
4. Electricity for light and power wherever the main supply is reasonably available.
5. A properly ventilated food store.

She regards these as the minimum needs for any cottage which has a probable life up to 1964, but for property with a longer life she urges:

1. A bath, if possible in a bathroom, but, if not, in the scullery with a table top
2. A hot water supply for bath and sink.
3. An inside closet with a flush lavatory.

She believes that there will be a steady demand for such improved cottages, and that many could now be put into repair and let at a rent to pay for the expenditure, which would still be less than the rent for a subsidised council house.

Miss Clay further makes the wise suggestions that small reconditioned cottages often provide the most suitable accommodation for pensioners and other retired people, and that there is scope for co-operation between the various property owners in the village for dealing with problem families.

Her conclusion is that post-war building in rural areas has been a very fine achievement—both for quantity and quality. "For that very reason," she says, "how important it is that all our rural cottages—old and new—should be carefully and wisely managed so as to ensure the maximum advantage to the community as a whole.

BRITISH STANDARDS

Circular Saws for Woodworking

THE BRITISH STANDARDS INSTITUTION has published a revised edition of BS 411:1931, "Attachment of circular saws for woodworking." The title of the standard has been changed slightly; its full designation is now BS 411:1954 "Circular saws for woodworking and their attachment."

This standard, which is the result of collaboration between the manufacturers of saw blades and of benches, embodies many new approaches to the subject. For the first time, for example, the dimensions and tolerances of the mounting spindles have been correlated with the mounting hobs in the saws themselves. Thus the machine user is assured not only of the quality of the saws, but also of a degree of interchangeability not hitherto achieved. Among the Government departments and other organisations represented on the Committee entrusted with the preparation of this standard were British Railways; Institution of Mechanical Engineers; the Ministry of Supply; Saw Traders' Association; and the Timber Trade Federation of the UK. The standard, price 3s., should prove of value to mills, furniture works, joineries, and those spheres where the sawing and preparation of timber must be undertaken by efficient, speedy and economical means.

Other British Standards recently issued include BS 417, "Galvanised Mild Steel Cisterns, Tanks and Cylinders," price 3s.; and BS 2509, "Layout of Periodicals: A Guide for Editors and Publishers," price 3s.

Copies may be obtained from the British Standards Institution, 2, Park-street, W1.

PLUMBING IN BUILDING

Autumn Lectures Programme

A PROGRAMME of evening lectures and demonstrations for plumbers, students, builders and others interested has been arranged by the South-Eastern Regional Council of the Registered Plumbers' Association, to be held this autumn at the Willesden Technical College, Denzil-road, NW10. They will include the following: October 15, "Corrosion and Plumbing," by Dr. Ernest Carr, PhD, AMIMechE (building engineer, Copper Development Association); October 29, "Copper in Building," also by Dr. Carr; November 12, "Practical Demonstration of Sheet Copper Work," by S. G. Clements, ARSanI, RP (Copper Development Association); December 1, "Leadburning," by L. E. Allen, RP (Lead Sheet and Pipe Council); December 3, "Lead in Modern Building," by L. E. Allen, RP (Lead Sheet and Pipe Council). The first three will commence at 7 p.m. each evening; the last two will be held at 1.30 p.m. each day. Further details from the Association's general secretary, Mr. J. M. Haig, AMIW, Argyle House, 29-31, Euston-road, SW1.

INSTITUTE OF HOUSING: ANNUAL CONFERENCE

Improvements and Conversions of House Property

THE 23rd annual conference of the Institute of Housing is being held in Torquay from September 16 to 18 under the chairmanship of Mr. C. V. Baker, AIMTA, president of the Institute. The first paper read at the conference was given by MR. MARTIN G. BOND, MC, MA, and dealt with improvements and conversions of house property. We reproduce Mr. Bond's remarks in full. He said:—

Much has been written and said over the past months emphasising the need to maintain in use for many years the great majority of the dwellings erected in the latter half of the nineteenth century. This involves modernisation as well as repairs. Property suitable for modernisation must, of course, be selected with care. It is some centuries since we were first warned that new wine should not be poured into outworn wineskins. But selective modernisation has important merits which should perhaps be summarised, thus:—

Cost.—By modernisation it costs less to produce a decent, up-to-date home—possibly a quarter, or a third, of the sum required for a new house. This must be reckoned not only in pounds, shillings and pence, but in materials, time and labour.

Time.—If the cost of modernisation is one-third that of the new house, the labour and materials will go three times as far and three times as fast. The amenities of the modern house, the bath, the hot-water system, and so on, will be available three times as quickly.

Services.—The disturbance of services, roads, drains, etc., is minimised when the existing road pattern is retained. This is a substantial saving to the common pocket if not to the housing account.

Accommodation.—Old houses have some advantages. Many have acquired character. The rooms are often bigger than in modern blocks. The woodwork may be of a high standard. The proportion of cottages to flats is high. There is often less noise between dwellings. There is a wide variety of size and plan.

THREE POINTS

On the other side of the account three points are perhaps worth mentioning, namely: *Worn Fabric.*—The maintenance of the fabric will almost certainly cost more than for a new dwelling. The life may be less than the 60 years which is the least we expect from a new building.

Internal Planning.—The internal arrangements will be less convenient than in a new block.

Town Planning.—Layouts of old dwellings vary; those worth modernising may be below current standards, and be at a higher density than would be approved for new development. The illustrations of the Stockton Test show a case in point. There are, however, advantages in retaining for 30-50 years slightly higher densities than are shown on Town Plans. At present it is broadly true of all cities that redevelopment displaces more people than can be rehoused. There is, therefore, a strict limit to the speed at which wholesale redevelopment can be carried out. One course, an increase in the density of new buildings, would be regretted by many, having regard to their life of, say, 100 years. But the burden of the problem is lightened if the better class of old property has an extended life of 30 years, and, for the time being, the density above the zoning is maintained. In any case higher density areas must remain for many years, and there is no reason why the occupants of buildings with a 30-year life should be deprived of modern amenities within the home on the grounds that, externally, the standards are not up to town planning requirements.

FINANCIAL FACTORS

These general factors for and against adaptations of old property are well known. The true merits of the particular situation are, however, masked and influenced by the subsidies available to new local authority dwellings, and the artificially low rents of existing lettings. The rents following modernisation appear excessive. But there are also subsidies available for improvements to old property, and it is with these that my paper is mainly concerned. These improvement grants were introduced in the Housing Act, 1949. Little use was made of them at first but, of late, applications to the Ministry have had a more encouraging reception, and they have received favourable publicity. Grants are available for local authorities, housing associations and private persons.

Local authorities with old property will find grants attractive, whether that property is newly acquired, or whether it represents an early excursion in municipal housing. The effect of the grant is to make possible a reduction in the rent increase (or rate burden) which would naturally follow the improvements. Every shilling saved on the rent, however, will cost the Exchequer 9d. and the ratepayers 3d. Between them, the tenant, taxpayer and ratepayer will pay approximately 3s. per week for every £100 spent on improvements.

Housing associations are in a more difficult position. Either they can receive a lump sum grant of half the cost of improvements or they can take an annual grant. If an annual grant is taken, three-quarters of the loss will be paid by the Exchequer and one-quarter may, or may not, be contributed by the local authority. Whatever type of grant a housing association receives, it will generally be true to say that it must put up a substantial sum of money on which it will earn less than the rate of interest to be paid on borrowings through the Public Works Loan Board. Some or all of the money must come from their own resources and the return on that money will rarely exceed three per cent.

PRIVATE PERSONS

Slightly different problems—and some difficulties—are presented by the interests of the owner-occupier and of the ordinary landlord.

(a) *Owner Occupiers.*—Like other landlords the owner-occupier is eligible for a 50 per cent. cash grant. For 20 years he or his family must live in the house, or it must be kept available for letting.

(b) *Landlords.*—Private landlords (including companies) are eligible for a cash grant of half the cost of executing the improvements. In this instance there is a distinct difference, as viewed by the landlord, between conversions which result in a new self-contained dwelling, and improvements, such as fitting a bath and hot water service. (The Stockton Test is again an excellent illustration of the latter type.)

Conversions.—If a new dwelling results from the improvement works, the landlord who takes a grant accepts bondage for at least 20 years, while otherwise he would be free of the Rent Acts and other special restrictions. Freedom to fix the new rent was always possible for a new dwelling (subject to appeal to a tribunal) apart from anything in the 1954 Act. From a long-term point of view there may be an advantage in an improvement grant when the property has a life of 30 years and over. But after the sterile restrictions of control, there are great attractions in the flexibility which freedom confers. The liquidity, the realisability, of the investment largely depends on the ability to sell with vacant possession. I would express the opinion that for this type of conversion there will be few applicants for grant.

Improvements.—For this first type the premises are under the Rent Acts and the landlord can choose either the eight per cent. (gross) allowed under the Rent Acts or the terms offered for improvement grants. Under the Rent Acts the net return will be about three and a half per cent. If an improvement grant is taken the rents will be fixed by the local authority in almost all instances. The basis on which the rent must be fixed is laid down, with the precision of the Delphic Oracle, in Section 16 (6) of the 1954 Act.

LOW RENT FOR 20 YEARS

Whatever the local authority's interpretation of the section the rent will obviously be lower where a grant is made. The approximate effect of the subsidy is to reduce the rent by 1s. 6d. per week on every £100 spent. Of this 1s. 6d., 1s. 1½d. will be passed to the taxpayers and 4½d. to the ratepayers. The lower rent which results from the subsidy should ensure that the property remains let in difficult times, while at the end of 20 years the landlord may, quite possibly, be able to raise his rent to the level of neighbouring unsubsidised lettings.

The difference will be pure profit. For the landlord, given a decent percentage return, the grant is worth the administrative inconvenience. For the tenant it means a lower rent for at least 20 years. For the local authority, however, the prospect is less pleasing. The council makes no nominations, but it contributes from the rates. It can bargain for nomination rights, but such rights may never materialise as there will generally be tenants in possession.

Of course it can be argued that, if housing subsidies are to be handed out haphazardly, a wider distribution to tenants in houses for which improvement grant applications are made would not be inappropriate. The amount would not normally exceed that paid to the tenants of council houses and it would be

limited to 20 years. (I say that subsidies are handed out haphazardly as I cannot find any other adverb to describe correctly the payment of a subsidy, for the rest of their lives, to persons who happen, at a given moment, to be in housing need. If the subsidy is not actually paid to the tenant, he does receive the full benefit from it.)

It would be well to note the total that improvement grants might amount to. To take an example, in the borough in which I live, Islington, there is a population of 247,000. There are 81,800 households, only 19,500 of which have self-contained accommodation. If £600 were spent on one in 20 of the 62,300 dwellings which are not self-contained the total cost would be £1,869,000. The cost to the council for 50 per cent. grants would be £934,500 and the loan charges on one quarter of this would be £16,812 per annum, equivalent to a twopenny rate (2.1d.).

LANDLORD'S PROFIT

I expect that some councillors dislike the idea of putting money—however little—into the pockets of landlords. But landlords, quite naturally, will not take all the trouble, and accept the risks and difficulties, if they are to get nothing out of it. For some reason landlords are not offered the attractive terms open to farmers, dentists, aircraft manufacturers and other classes whose products and services are valued by the nation.

We must face the fact, however, that if results are to be achieved the landlord must be given some incentive. To refuse on principle to encourage modernisation, or make a grant, because the landlord could benefit, would mean cutting off the tenant's nose to spite the landlord's face. Each council must work out the details of its own policy. It should win the best terms for itself and for the tenants who are ratepayers just as much as the landlord. But it should also make terms which give some encouragement to the landlord for modernisation at a restricted rent.

The decision to indulge in fresh subsidies must not, however, be taken "inadvisedly, lightly or wantonly." While the direct effect of subsidies is beneficial, the indirect may be of a different character. Subsidised goods tend to drive out unsubsidised goods, and thus a subsidy can exaggerate the shortage it is designed to relieve. It would be unfortunate if the subsidy operated to discourage all improvements not the subject of a grant. But it must be recognised that without improvement grants adequate use will not be made of old property which comes into the possession of civic authorities.

If the cost of unsubsidised improvements were only half the cost of a new dwelling, the rents, or the rate burden, would be higher for the improved old dwelling than for the new one carrying a substantial Exchequer subsidy. Without the improvement grant, therefore, the local authority would be inclined to concentrate unduly on new building alone. Once the principle of improvement grants is admitted, what is sauce for the council goose is also sauce for the public gander.

VALUE FOR MONEY

Having considered subsidies from the rather narrow, parochial and selfish point of view of local authority and landlord, it is right that I should consider the wider position. I am sure that every encouragement to husband our stock of existing houses is sound, and I am sure that improved amenities should be as widespread as possible. There is a complementary need for steady progress with new buildings.

If we contrast the subsidies for new dwellings and for modernisation we find a striking difference. The subsidy for modernisation is broadly the same in all districts. The subsidy for new dwellings varies in effect between the big towns and the rest of the country. Flat subsidies in London often run to £100 per flat per annum. The cottage subsidy taken generally is only £36 per annum. People prefer to live in cottages, and every responsible town planner and sensible layman is keen to reduce the London population, but yet we pay extra for flats to be built, and bribe people to come and live in London! Being a Londoner perhaps I had better say no more.

But I do think that these figures, which reflect the high cost and difficulties of new development in cities, suggest a special case for pressing ahead with improvement work in London and other towns of high density. The money poured out in flat subsidies—to cover costs of £2,500 a flat—would go a long way in improvements, and, as I have pointed out at the beginning, the cost is a way of expressing the effort required for these different jobs.

SLUM CLEARANCE

Institute of Housing Talk

THE way in which housing authorities should set about the task of putting into effect slum clearance programmes, was discussed by MR. R. RIBBLESDALE THORNTON, MA, LLB, in a paper read at the annual conference of the Institute of Housing at Torquay on September 17. We give the following extracts from his remarks:—

One of the earliest decisions which will have to be taken by the housing authority is how many houses they are prepared to allocate annually for the re-housing of slum-dwellers. The factors to be taken into account include the number of houses which will be provided annually by the authority—that figure will be known, as the Government seems to be stabilising house building at its present rate—and the respective needs of those who dwell in slum houses and those others who have a more general housing need.

The housing manager can be of great assistance to his committee here by providing the committee with an analysis of the needs of those on the housing waiting list, but it will still not be a simple matter to decide the proportion of houses to go to the rival claimants.

FIVE-YEAR PROGRAMME

When the total number of slum houses and the number of new houses to be allocated for re-housing slum-dwellers is known, then there will be a clear picture of the time required to deal with the existing slums. If the authority are fortunate enough to be able wholly to demolish and replace their slums within five years, then they should not exercise the powers of deferred demolition contained in the new Bill, but should confine themselves to the existing powers available in Parts II and III of the Act of 1936.

If the slums cannot be wiped out within five years, then the authority must decide how much they can do by acquiring areas, not for the purpose of immediate clearance, but with the object of carrying out a certain amount of repair and decoration to the slum houses in them to make them more tolerable to live in.

HELP REQUIRED

Which houses shall they be? In this connection we need further help from the medical officer of health and the sanitary inspectors. We have already seen that it will be their task to ascertain the number and location of slum houses. But we have also been talking of houses "which, in the opinion of the authority, are or can be rendered capable of providing accommodation of a standard which is adequate for the time being." Parliament, probably very wisely, has not attempted to define this standard, and it may well vary from one authority to another, those authorities with the greater problem having to accept the lower standard.

It will be necessary, therefore, in deciding on the priorities in the programme to know which are the worst of the slum properties and which the best. The degrees of unfitness will have to be ascertained and a decision made on where to draw the line between those capable of providing accommodation of a standard adequate for the time being and those which are not. The latter will have to come down, whereas the demolition of the former may be deferred.

OFFICIAL NOTIFICATION

Purchase Tax Chargeable on Wooden Flooring Tiles, Strips and Blocks

THE TREASURY have made an Order under Section 21 of the Finance Act, 1948, entitled "The Purchase Tax (No. 5) Order, 1954," reducing from $\frac{1}{4}$ in. to $\frac{1}{2}$ in. the thickness below which wooden tiles, strips and blocks of a kind suitable for laying on or fixing to floors or sub-floors are chargeable under Group 9(a)(ii) of the Purchase Tax Schedule. As a result of the order, wooden flooring tiles, strips and blocks will not be chargeable with tax when of a thickness (excluding any backing) of $\frac{1}{2}$ in. or more. The order does not apply to flooring tiles, etc., of cork, which remain chargeable with tax when less than $\frac{1}{2}$ in. thickness.

The order applies to goods which are despatched on sale by registered traders to unregistered traders or appropriated to retail trade or similar purposes by a registered trader on or after September 13, 1954, and to imported goods entered with the Customs or delivered from bonded warehouse for home use, on or after that date.

As from September 13, 1954, the following amendment is to be made in the Statutory Schedule printed in heavy type in Notices Nos. 78 and 78D (as amended): Group 9. In sub-paragraph (a)(ii) delete the words "wood or." Copies of the order (Statutory Instruments, 1954, No. 1179) may be obtained (price 2d.) from HM Stationery Office.

INTERNATIONAL CONGRESS ON HOUSING AND TOWN PLANNING

To be Held in Edinburgh

[*From a Correspondent*]

THE 22nd congress of the International Federation of Housing and Town Planning is to be held in the Assembly Rooms, George-street, Edinburgh, from September 19-23 and will be the first to be held in Scotland.

The Federation was formed in 1919 to promote and co-ordinate throughout the world the study of the principle of housing development, national, regional, town and country planning. With permanent headquarters at The Hague, the Federation is the only body organised on an international basis to deal with housing and town planning. The president is Dr. L. S. P. Scheffer, who was until recently in charge of planning for the City of Amsterdam and who is now in business as a private consultant.

The Federation is supported financially by most of the Governments of Western Europe as well as by the United States, Latin America (including Brazil), Canada, South Africa and India. All the countries mentioned are represented on the executive committee and Her Majesty's Government contributes annually to the expenses of the Federation. Office-bearers from Britain include Lord Silkin, Sir William Holford, and Sir George Pepler.

It is also the only organisation which includes all types of administrative and technical experts on housing and town planning. Its membership includes national, regional and local societies for housing, planning, public health and municipal affairs; Governmental bodies, public authorities or nations, regions, cities and districts; professional societies of architects, engineers, surveyors, planners, estate and housing managers, municipal officials and individual persons.

The subjects for discussion at the main sessions of the Congress next week are "Slum Clearance and Re-housing" (September 20), "National Land Use Planning" (September 21) and "Housing Density" (September 24). Papers on these subjects are contributed by all the participating countries. The Scottish papers are contributed by Bailie Matt. A. Murray, Edinburgh, Mr. J. H. McGuinness, Department of Health for Scotland, and Mr. T. A. Jeffreys, ARIBA, AMTPI, Chief Architect and Planning Officer, Department of Health for Scotland.

At each of the main sessions of the congress the papers will be summed up by the general reporters who are Mr. Leo Grebler, Associate Director, Columbia University, New York ("Slum Clearance and Re-Housing"), Mr. Andre Prothin, Directeur-General, Amenagement du Territoire, Ministere de la Reconstruction et du Logement, Paris ("National Land Use Planning"), and Sir Patrick Dollan, LLD, DL, JP, Chairman, East Kilbride Development Corporation ("Housing Density"). Further discussion of these subjects will take place at group meetings to be held throughout the session.

Group meetings will also discuss the following subjects:—The Basis of Site Selection for Industry; Problems related to Declining Areas; Rent and Family Income; Regional Planning for Underdeveloped Countries; Hydro-Electricity in Planning; Problems common to the work of City Housing Directors; Problems common to the work of Regional Planning Officers; Town Planning Education; The Role of the Voluntary Housing Association.

The official languages of the congress will be English, French and German and arrangements have been made for the simultaneous translation of all speeches.

Delegates will be the guests of the Government at a garden party at Lauriston Castle on September 22, and will be the guests of the Lord Provost and the Magistrates of Edinburgh at a reception on September 24. A number of tours has also been arranged which will enable delegates to see developments recently completed or in the course of construction: Paisley, Glasgow and Edinburgh planning and replanning schemes, the new town of East Kilbride, and the Anglo-Iranian Oil Refinery at Grangemouth.

The week following the congress a number of tours will be organised to take delegates to see hydro-electric schemes and to see something of the Highlands, the Trossachs and the Firth of Clyde.

In conjunction with the conference, an exhibition of housing and planning in Scotland, an international bibliographical exhibition and a selection of international films on these and related subjects will be provided for the delegates.

AIR POLLUTION

Conference at Scarborough

ONE OF THE BIGGEST air pollution conferences yet to take place in this country is to be held at Scarborough by the National Smoke Abatement Society from September 22 to 24. Nearly 500 delegates and members, representing local authorities, government departments, the fuel and power industries, manufacturing interests, the railways and technical organisations, will be present, and will hear Sir Hugh Beaver give an address that will in effect be a curtain-raiser for the final report of the Government Committee on Air Pollution, of which he is chairman. Although Sir Hugh will not be able to anticipate the recommendations of the report, which is hoped to be published in a month or two, his agreement to attend and speak at their conference, writes a correspondent, is regarded by the National Smoke Abatement Society as an encouraging sign.

The many-sided nature of the smoke problem is illustrated by the fact that the presidential address will be on "The Coal Crisis—and the Society," by Sir Ernest Smith, chairman of the Industrial Coal Consumers' Council, while the Des Voeux Memorial Lecture will be on "Air Pollution and Plant Life," by Sir Edward Salisbury, Director of the Royal Botanic Gardens, Kew.

More technical aspects will be reviewed in papers on the industrial uses of gas and electricity, both of which are being increasingly used for processes previously dependent on raw coal. The gas paper will be read by Mr. R. F. Hayman, industrial gas officer, the Gas Council, and that on electricity by Mr. J. I. Bernard, chief technical officer of the British Electrical Development Association. For this session the chairman will be Dr. W. A. Macfarlane, director of the National Industrial Fuel Efficiency Service. Mr. R. F. Harvey, chief officer, motive power, British Railways, is to give a paper reviewing the efforts being made to reduce smoke from steam locomotives and developments in smokeless forms of traction.

The conference is open to all who may wish to attend and details can be obtained from the Society, 30, Grosvenor-place, SW1.

CONCRETING ON SITE

Productivity in House Building

[*From a Correspondent*]

INVESTIGATIONS at the Building Research Station are showing the great importance of site organisation and the use of mechanical equipment as factors in productivity in house building. A great deal of field work has been done on problems of labour saving and on the development of planned sequences of operations to increase production in the building industry. Special Report No. 23, "A Study of Concreting Methods on Housing Sites," published by the Stationery Office, price 2s. 6d., concerns itself with current methods of mixing and placing of concrete on housing sites, the economical use of labour and the circumstances in which mechanical equipment can save cost and speed output.

Loss of production in concreting can be caused by inefficient use of labour in unbalanced wheelbarrow gangs. The report analyses typical concreting operations and suggests efficient cycles of operations for various site conditions and for gangs of different sizes. To obtain the highest efficiency the site procedure should be based on the time the mixer takes to turn out a batch of good-quality concrete. For 10/7 and 7/5 machines the time is about 2½ minutes per batch.

BATCH HANDLING

Handling each batch of concrete from the mixer in a container large enough to take the complete batch instead of splitting the batch between wheelbarrows may save much time and labour. The second part of the report deals with the use of special equipment such as two-wheeled barrows, concreting booms, powered barrows, tracked vehicles and monorail transporters, which can take the complete batch from a mixer in one loading. This method of handling concrete can substantially reduce the cost of the work. As an example of the estimated costs of concreting using special equipment and efficient site organisation may be quoted a plant and labour cost of 5s. 4d. per cu. yard of concrete laid in foundation trenches, at a rate of nearly 5 cu. yards per hour, using a gang of six men and a three-wheeled powered barrow over a run of 40 yards.

Organisational problems are dealt with and the ancillary equipment such as ramps and trench bridges required by wheeled and tracked vehicles is described.

It was established that machines at present available can save labour and cost in concreting by enabling the mixer to work at full capacity. Further savings could be made by improvements in the present performance and mobility of the mixing machines themselves. The report emphasises, however, that to achieve the best results it is necessary to plan the sequence of operation as a whole. Speeding just one section can be disappointing because it may result in disorganisation of subsequent operations.

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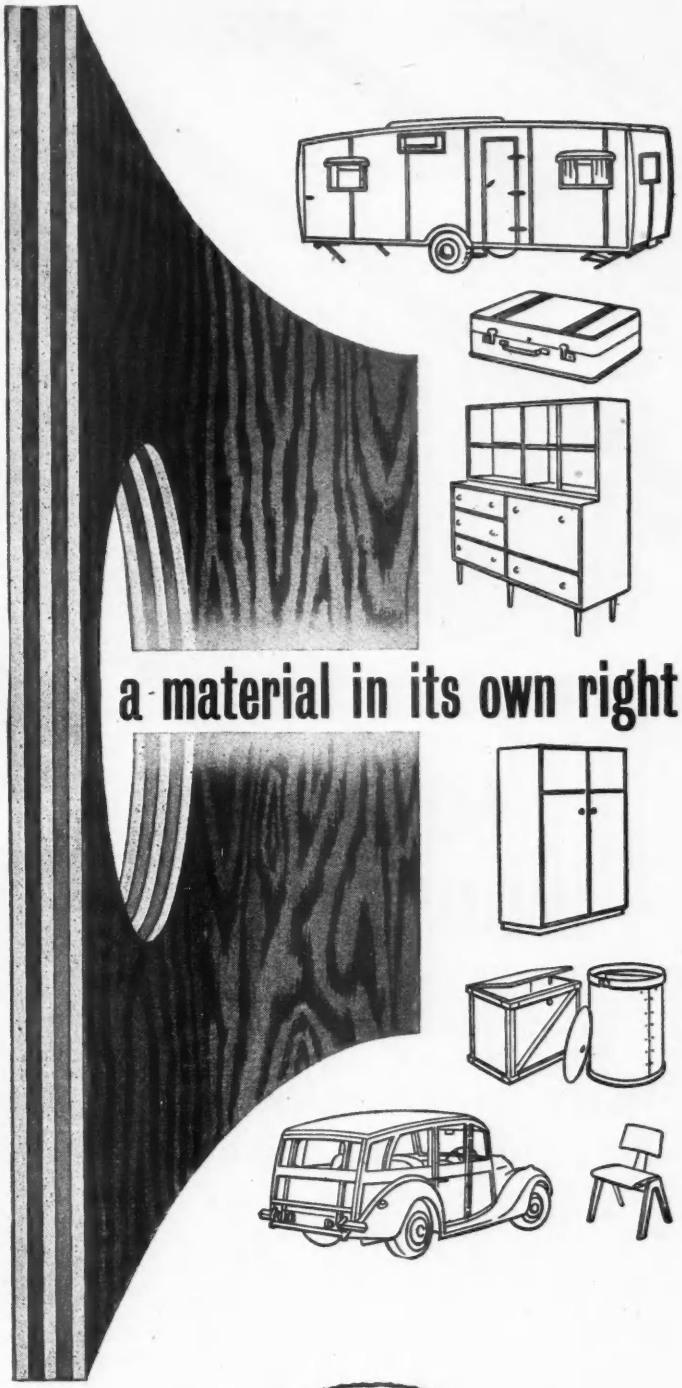

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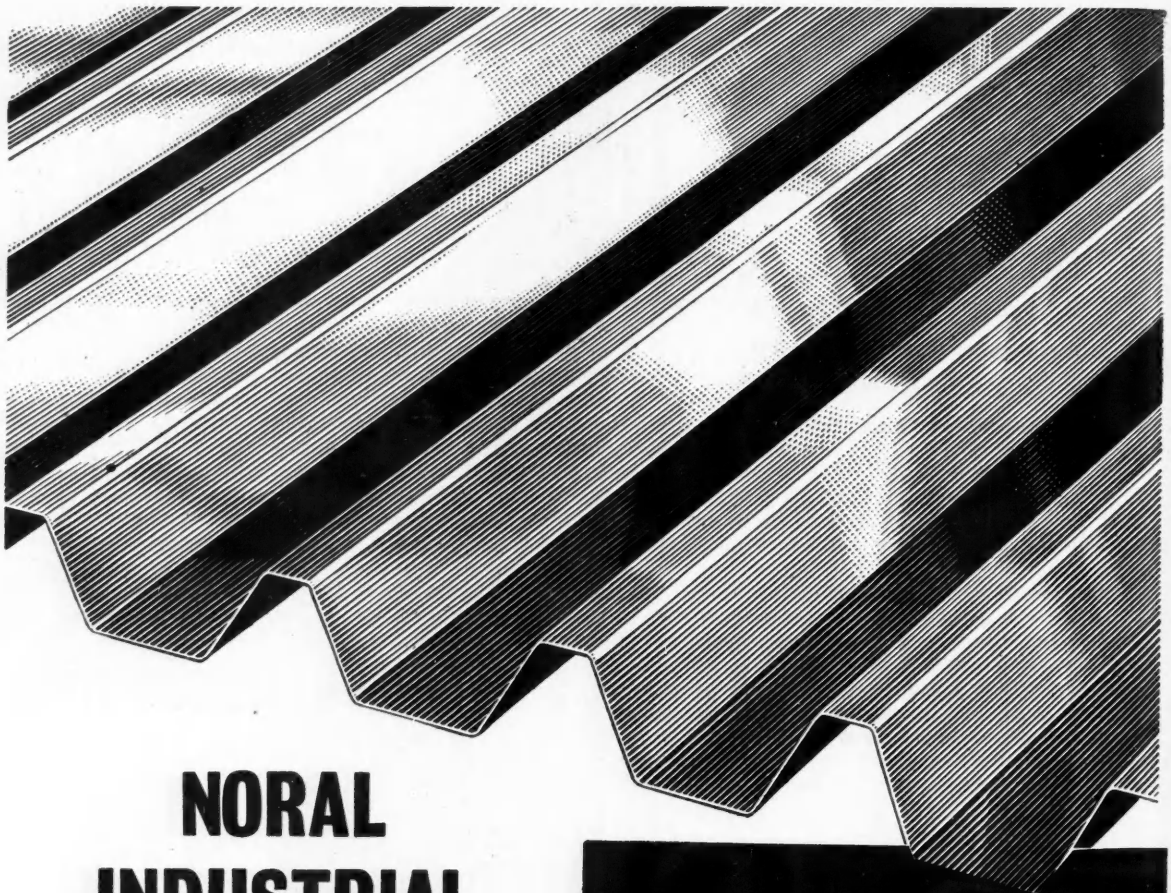

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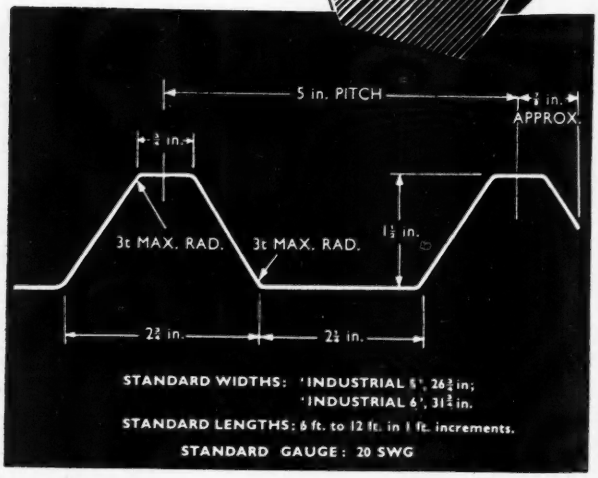

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ALL-ELECTRIC FLATS

Kirkcaldy Scheme Approved

AN eight-storey all-electric floor-heated block of flats, a prototype for the further development of five other blocks, has been approved by the Department of Health for Scotland and is now in course of construction at Templehall Housing Estate for the Kirkcaldy Corporation. The following description of the building, with particular reference to the electrical installation, has been issued by the South-East Scotland Electricity Board.

Each block of 48 flats, constructed by Messrs. George Wimpey and Co., Ltd., comprises a reinforced concrete frame structure with 12 in. no-fines walls or panels; the intermediate floors are of 5 in. precast Bison slabs overlaid with 1 in. paper-bound glass wool insulation which is compressed to ¼ in., finished with screed to a depth of 1¼ in. and covered with ¼ in. Marley tiles. The glass wool is primarily for sound insulation and in order to minimise the transmission of sound the glass wool is turned up at the walls to the thickness of the floor, thereby, in effect, providing a floating concrete floor in each room. The under-side of the Bison beams forming the ceiling is finished with a coat of plaster.

NO CHIMNEYS

The flats will not be provided with fireplaces or chimneys, and will be entirely electric. Two incinerators will be installed for combustible waste disposal. The provision of a lift will give access to all floors. In each flat the living-room and the hall will have "Panelec" floor heating, which is designed to provide an equivalent comfort effect of 60 degrees F. The Kirkcaldy Corporation are to provide an electric fire of the radiant "coal effect" type in the living-room of each flat. Suitable socket outlets will be provided in the bedrooms so that tenants may install electric fires if desired. Electricity for floor heating and water heating will be made available on the South-East Scotland Electricity Board's "off-peak" tariff at an inclusive rate of .7d. per kW during the hours 7 p.m. to 7 a.m. with a mid-day boost from 11.30 a.m. to 3.30 p.m.

Each flat will be provided with a 30-gallon hot water storage cylinder fitted with a 3 kW immersion heater and thermostat time switch controlled on the same circuit as the floor heating. The combined electricity consumption for floor heating and water heating will be separately metered in each flat. There will be a drying-room on each floor in which grilles will be provided, and it is intended to experiment with natural ventilation for drying purposes, but in the event of this method being unsuccessful electric drying cabinets will be installed. Each flat will be provided with an electric cooker.

The heat losses on the ground floor, intermediate floors and top floor are, of course, different, and the following are the proposed floor heating loadings:

	3-Roomed Flats	2-Roomed Flats
Ground floor flats	3 @ 4.1 kW	3 @ 3 kW
Intermediate flats	18 @ 3 kW	18 @ 2.6 kW
Top flats	3 @ 4.85 kW	3 @ 3.75 kW

It is estimated that the cost of floor heating for a season of 210 days will average approximately £14 per annum per house and the water heating at £10 per annum per house.

The capacity of an adjacent substation will be increased by 300 kW in order to supply the flats and the main electricity service will be taken to a room on the ground floor. Six pairs of vertical rising mains will be taken from this central position, each pair supplying eight flats. One of the rising mains will supply the ordinary peak load requirements such as lighting, additional heating, cooking and wireless. The other will supply the "off-peak" loads and will be time-switched at the service position on the ground floor. In order to facilitate meter reading without disturbing the tenants the Burgh Engineer has arranged for the meters to be installed in the entrance vestibule of each flat.

LMBA

Luncheon to the Lord Mayor

IN addition to the Minister of Housing and the Minister of Works, Sir Walter Monckton, the Minister of Labour, is also to attend the LMBA luncheon to the Lord Mayor at the Savoy Hotel on September 28.

Among the other guests will be the Mayor of Westminster, the vice-chairman of the LCC and the chairman of the Middlesex County Council; the presidents of the National Federation of Building Trades Employers and the Federation of Civil Engineering Contractors; the president of the Architectural Association and representatives of the RIBA; the presidents of the Institute of Builders, the Royal Institution of Chartered Surveyors, the Institution of Civil Engineers and the Institution of Municipal Engineers; the masters of the City Companies connected with the building industry and the director of the City and Guilds of London Institute and the chairman of the Council of the Royal Society of Arts.

New IOB President to Address LMBA

MR. LESLIE WALLIS, OBE, JP, the new president of the Institute of Builders, is to be the guest of honour of the Council of the LMBA at a luncheon before its October meeting on October 21. The president, Mr. R. S. Williams, will preside.

Mr. Wallis is afterwards to address the Council on the work of the Institute.

Donation to Builders' Foremen

THE LMBA has sent a donation of 20 gns. to the London Association of Builders' Foremen and Clerks of Works which this year celebrates its diamond jubilee.

Mr. G. W. Grosvenor, president of the National Federation, is chairman for the year of the Association's Pensions Appeal, and the annual dinner takes place at the Café Royal on November 2.

PUBLIC WORKS EXHIBITION

Wide Range of Display

THE PUBLIC WORKS and Municipal Services Congress and Exhibition for 1954 will be held at Olympia, London, from November 15 to 20. Mr. Harold Macmillan, Minister of Housing and Local Government, will perform the opening ceremony.

The exhibition, expected to be one of the most comprehensive of its kind in the world, will provide a complete survey of the equipment required by expanding municipal and local government services, both at home and overseas. It is estimated that nearly £1,000m. is spent annually on maintaining the essential services in the cities, towns and villages of Great Britain alone.

For administrators and technicians, the Congress will constitute an international forum of expert opinion on the many problems with which public and local authorities are concerned. Representatives from some 60 overseas countries are expected to attend the Congress, many of whom will be potential buyers of the wide variety of equipment, machinery, plant and appliances to be displayed on the 275 stands in the three halls at Olympia. Among the thousands of exhibits will be found a number of new developments and fresh ideas.

1953 NATIONAL BUILDING CODE FOR CANADA

National Research Council Publication

A NEW National Building Code for Canada has been published, and is an advisory document for the use of municipalities and other interested agencies in all parts of the country. This document, issued by the Associate Committee on the National Building Code of the National Research Council, is essentially a revision of the first National Code published in 1941. The 1953 Code has been prepared following a new arrangement as a result of which it is available either as a bound volume or in the form of fifteen separate pamphlets in a looseleaf binder. Publication in pamphlet form means that any one of the fifteen parts can be revised when necessary, without interfering with the contents of the rest of the Code. It is the intention of the Associate Committee to keep the National Building Code continually under revision so that it will be a "living" document in close conformity with the best of modern building practice.

A building code is essentially a set of minimum regulations with regard to requirements for buildings and is prepared and issued in the interest of public safety. Three basic requirements—the protection of public health, the prevention of fire, and adequate structural design—provided the foundation for the original Canadian Code, and were considered in connection with every aspect of the new Code. The preparation of building codes is a time-consuming and expensive business, often beyond the financial resources of the smaller municipalities. It was for this reason that the original Canadian Code was first produced by the Department of Finance and the National Research Council. The history of this early development is therefore of importance in connection with the recent work of revision.

"PRODUCT OF DEPRESSION"

The National Building Code is really a product of depression years. The attention given in the '30s to the problem of house building, culminating in the first National Housing Act, will be well remembered. When this Act was put into operation, it was found that many municipalities lacked a building code of any sort and that many building regulations were out of date. A joint committee was therefore set up by the Department of Finance and the National Research Council under the chairmanship of Mr. F. W. Nicolls, and with the expert guidance of General A. G. L. McNaughton, then president of the National Research

Council. With the aid of a number of technical committees, the present National Building Code, a volume of over 400 pages, was produced and published in 1941. It is essentially an advisory document, not intended to be a manual of good practice but a set of minimum building regulations designed to ensure certain minimum standards in building by all agencies who use it. 10,000 copies have now been issued and it is used as a reference document by over 600 municipalities in Canada and is in active use by over 200, including such cities as Calgary, Saskatoon and Moncton. The new Code of the City of Montreal was based upon it.

It was published just as the war approached a critical stage, and its use was therefore impeded by the imperatives of the wartime emergency. It did gain steadily in acceptance but nothing could be done in those years with regard to its revision or with regard to the comments which developed as it was used. The need for having in Canada an organisation capable of doing the necessary research work and providing all the technical and secretarial service for the maintenance of the National Building Code as a living document was one of the reasons which led the National Research Council to set up its new Division of Building Research in 1947. The Code was therefore critically reviewed soon after the Division was set up in association with the remaining members of the Administrative Committee which had developed it. The need for some revision was obvious, but a new method of operation was equally desirable.

In 1948 therefore, the National Research Council decided to set up an Associate Committee on the National Building Code. This committee was formed in 1949, and now operates as one of 30 Associate Committees which assist the Council in its vital work, each one responsible for a special field of scientific or technical interest. The Associate Committee on the National Building Code, consisting of about 20 Canadians, appointed as individuals and not as representatives, has two responsibilities; to promote the uniformity of local building regulations in Canada and to maintain the National Building Code as an up-to-date document.

ACHIEVING UNIFORMITY

After careful consideration, the committee decided to achieve its first objective by concentrating upon the second. Progress in developing uniformity would be slow if dealt with on the basis of individual codes. If, however, the National Building Code can be kept under development as a document suitable for use throughout the country, then its steady adoption for local use should bring about uniformity in local building regulations much more quickly than in any other way.

The first production of the Associate Committee was an abridged version of the 1941 Code, "The Code for Dwelling Construction." The Committee then proceeded with a critical review of the use of the 1941 Code. It was found that most of the comments on this Code were criticisms, not of its content, but of its arrangement. Research was therefore done on the arrangement of building codes in general by Mr. R. S. Ferguson, BArch, secretary of the committee. A new arrangement was developed and adopted by the Associate Committee. This has resulted in a set of eight parts, each complete in itself, requiring less cross-referencing to other parts. In consequence, a major revision of the entire Code should not again be necessary as each part can be taken out and revised completely without reference to the other seven parts.

The main subject headings of the Code are as follows. The first Part deals with administrative requirements and has reference to local ordinances in allied fields. It is therefore the only Part which will have to be changed for the use of a municipality. Arrangements will be made for it to be reprinted at cost with the name of any municipality in it and any special local changes.

CLIMATIC FACTORS

The second Part deals with climate, in order to make the Code a national document. This Part includes 12 maps which show essential climatic factors, such as rainfall, snow loads, and wind velocities. The factual information represents the results of almost two years' work by the Climatologist of the National Research Council's Division of Building Research. A supplementary climatological atlas of Canada has been produced jointly by the Council and Meteorological Service of Canada and contains 100 maps and a number of diagrams showing the average climate for all the leading cities of Canada. It is believed that not only the atlas but also the climate part of the Code will prove to be of wide use in many fields as well as in connection with building.

The third Part of the new Code includes all the requirements for a building code which are dependent upon the use and occupancy of buildings, irrespective of their type of construction. For example, all the special requirements of such building types as hotels and restaurants are given in this Part and they must be applied whether such buildings are constructed in steel, concrete, or wood.

Part four is concerned with the actual structural design of buildings, the first section dealing with general design requirements. Additional sections deal with excavations and foundations, design in wood, design in structural steel, design in reinforced concrete, requirements for plain concrete and for masonry construction, and finally a section which deals with cladding.

The fifth Part is a compilation of complete references to all the specifications which have to be used to detail ordinary building materials. Specifications for the testing of building materials are also included. This Part was produced by a special technical committee which acted jointly for the Associate Committee and also for the Canadian Standards Association. The new sections on steel and reinforced concrete designs are reprints of new CSA specifications in these fields. Correspondingly, the new NBC section on wood design has been given to the CSA for their use as a specification.

This co-operation is seen also in the seventh Part of the new Code, which consists of a national plumbing code. Not only will this section serve as a part of the National Building Code, but it will also be available for use as an independent document for sanitary engineers and for this purpose is available in pocket-size form. It was developed by a special joint committee including the provincial sanitary engineers which served under the advisory committee on Public Health Engineering.

Part six deals with general services, including all the services which have to be fitted into a building after the structure is built, such as heating, ventilation, insulation, elevators and similar mechanical aspects of building.

CONSTRUCTION SAFETY

The last Part deals with construction safety measures and details the steps which must be taken in order to make construction operations safe, not only from the public point of view but also for all those engaged on the construction job. In view of its importance to construction workers, it has also been produced as a pocket-size pamphlet in addition to the usual standard form.

The work of preparing these many sections was carried out by ten main technical committees and by 17 special technical panels. Almost 200 builders, architects, engineers, building officials and others interested served on these committees, and gave considerable time to the work.

When the first complete drafts of each part or section were ready, copies were mailed to a selected mailing list and comments from all parts of the country were solicited. About 10,000 copies of the drafts were circulated and over 2,000 individual comments were received. Not all suggestions could be accepted since even in the committees differences of opinion frequently developed. The abridged version of the 1941 Code, "A Code for Dwelling Construction," will now be revised in order to be an abridgement of the 1953 Code.

The work of revision has brought to light many building problems which call for intensive research activity. These are being passed to the National Research Council's Division of Building Research so that a start may there be made on seeking solutions to these problems and so improving not only Canada's National Building Code but other documents of a similar character. The building code staff of the Division of Building Research of the National Research Council, acting on the instructions of the Associate Committee, are getting into touch with municipalities and provinces in all parts of the country in order to assist them in determining how best the new Code can be fitted into their special requirements. Some provinces have already taken steps to authorise the use of the Code under their jurisdiction.

It is hoped that the many cities and towns which use the existing Code will now adopt the new Code in view of the improvements which it contains. Correspondingly it is hoped that many other cities and towns throughout Canada will adopt the new National Building Code for their use. The more this is done the greater will be the degree of uniformity in building regulations throughout Canada.

A complete set in binder form of the revised National Building Code, NRC3188A, price 23s., is available from the Scientific Liaison Office of the National Research Council of Canada, Africa House, Kingsway, WC2.

OUTSIDE PAINT has an outsize job

Outside painting is quite a different proposition from inside painting. *Outside* painting has to do a protective job, and if that job is ever neglected the very soundness of the building may be endangered. It's as simple as that, and as serious. What kind of paint can protect a door, a window frame, a cement-rendered or stucco front from the ceaseless attack of British weather? What kind of paint needs fewer repaints, and less expensive repaints because it doesn't crack or flake? The answer has been proved good over centuries.

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The Greeks had no word for this . . .

A brainy Greek named Pythagoras evolved a theory which brought fame to him and sleepless nights to generations of school boys. The details escape us now but there was a long word "hypotenuse" and something about triangles, right angles and other angles.

Talking about angles, did you know there is a very simple way of fixing scaffolding tubes together at any angle? It's the NO-BOLT Swivel Coupler, It makes a very secure coupling. What's more it cuts erection costs by as much as 80% (saving you many sleepless nights). You don't need a brain like Pythagoras to fix it either, just a single tap with a hammer to secure or release it. We don't know what the Greeks would have called it, but we do know that it's saving builders an awful lot of time, labour and money. Write for details.

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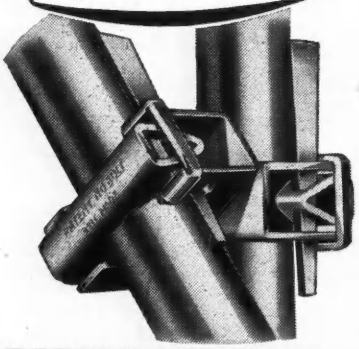

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'CAPTIVE WEDGE'

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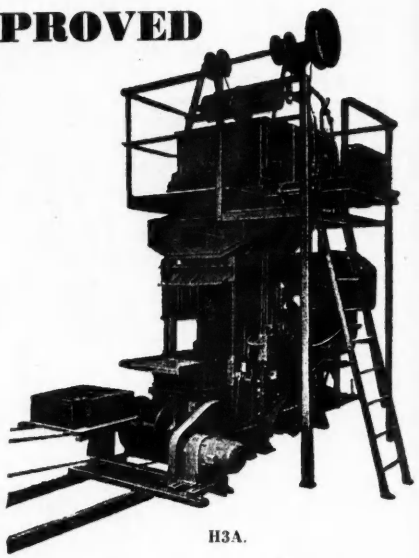

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E2.

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HOURLY OUTPUT—UP TO

BLOCKS	E.2	H.2	H.3A
18 x 9 x 4½	480	1200	2160
18 x 9 x 4	480	1200	2400
18 x 9 x 3	600	1400	3120
18 x 9 x 2½	840	2000	3840

or equivalent, according to size of block

ONLY ONE PALLET NEEDED FOR ALL BLOCKS

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The Builder

CURRENT PRICES OF MATERIALS

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchants warehouse will necessarily be higher so as to include the stocking and handling costs involved. Due to the exceptional circumstances now prevailing it is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£	s.	d.
Pit Ballast	per yd.	1	3	1
Pit Sand	,,	1	1	8
Washed Sand	,,	1	3	8
¼ in. Shingle	,,	1	0	0
¼ in. Broken Brick	,,		19	3
Pan Breeze	,,		9	6
Fine or Coarse Foamed Slag Aggregate	per ton	3	0	9
2 yds. of fine and 2.6 yds. of coarse per ton				

CEMENT, etc.

Including non-returnable jute sacks or paper bags.

		£	s.	d.
Best British Portland Cement. Standard Specification delivered Charing Cross area.				
6-ton loads and upwards, site	per ton	4	16	6
1 to 6 tons, site	,,	5	5	6
Ferrocrete Rapid Hardening Cement in 6-ton loads and upwards to site	,,	5	4	6
1 to 6 ton do. site	,,	5	13	6
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.				
Red, Buff or Khaki Colorcrete in 6-ton lots ...	,,	6	18	0
Other colours according to colour.				
In 4-ton lots from 211s. 9d. to 435s. 9d. per ton.				
White Portland Cement	,,	12	17	0
Under 1 ton	per cwt.		15	4
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards	per ton	6	9	0
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.				
Cullamix Tyrolean Finish, £9 4s. 3d. to £10 17s. 9d. (1-ton loads and upwards).				
Lightning and Ciment Fondu Brands High Aluminous cement, 6-ton lots and up	,,	14	0	9
Stourbridge Fireclay, 6-ton loads at Railway Depot, London	,,	6	2	3

BRICKS

		£	s.	d.
Full Loads.				
First Hard Stocks	per 1,000	11	7	0
Second Hard Stocks	,,	10	11	0
Mild Stocks	,,	8	16	6
All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.				
2½ in. Nominal Fletton Bricks to sites in W.C.				
District Commons	,,	5	13	0
Cellular do.	,,	5	13	0
Keyed do.	,,	5	15	0
Rustics	,,	6	18	0
Cellular Rustics	,,	6	18	0
Single Bullnose do.	,,	6	13	0
Sandfaced	,,	7	13	0
Best Blue Pressed Staffs (London Stations) ...	,,	24	19	6
Do. Bullnose (London Stations)	,,	25	13	6
Blue Wire Cuts (London Stations)	,,	22	11	0
Midhurst Lime Bricks (London Sites)	,,	10	3	0
Uxbridge Whites (London Sites)	,,	9	1	6
2½ in. Best Stourbridge Fire Bricks (London Stations)	,,	24	6	0
3 in. do. (London Stations)	,,	29	3	3
2½ in. Machine-made Sandfaced Red Facings (London Sites)	,,	13	19	6
2½ in. Machine-made Multi Red Facings (London Sites)	,,	14	4	6
2½ in. Hand-made Sandfaced Red Facings (London Sites)	,,	14	7	0
2½ in. Hand-made Sandfaced Multi-Colour Facings (London Sites)	,,	14	7	0
2½ in. Surrey Clamp Burnt Multi Stock Facings (London Sites)	,,	13	6	0
2½ in. Surrey Kiln Burnt Multi Stock Facings (London Sites)	per 1,000	14	4	6
Glazed Bricks (London sites), White, Ivory, Brown—				
Stretchers	,,	64	0	0
Headers	,,	63	0	0
Quoins, Bullnose and 4½ in. Flats	,,	80	0	0
Double Stretchers	,,	85	0	0
Double Headers	,,	77	10	0
One side and two ends	,,	87	0	0
Two sides and one end	,,	89	10	0
Splays and Squints	,,	83	0	0
Cream and Buff £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White. All above prices plus 7½% for Best quality and plus 7½% less 10% for Second quality.				

PARTITION SLABS, etc.

Delivered Central London Area.

	Minimum lorry loads.			
Hollow Clay Partition Blocks (Keyed)				
2 in.	140 yds.	per yd. sup.	4	3
2½ in.	140 yds.	,,	4	6
3 in.	120 yds.	,,	5	0
4 in. (6 cavity) ...	95 yds.	,,	6	7
Half blocks at no extra charge.				
Clinker Concrete.				
2 in.	100 yds.	,,	3	7
2½ in.	85 yds.	,,	4	2
3 in.	75 yds.	,,	5	0
4 in.	55 yds.	,,	6	2
Cranham				
2 in.		,,	6	8
2½ in.		,,	7	4
3 in.		,,	8	7
4 in.		,,	10	7
4½ in. Load bearing quality		,,	11	8
Floor Blocks				
3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads		per 1,000	31	10	0
4 in. do.		,,	34	13	0
5 in. do.		,,	39	7	0
6 in. do.		,,	46	16	0
7 in. do.		,,	54	1	0
8 in. do.		,,	61	15	0

STONEWARE DRAIN PIPES, etc.

The following are the percentages to be added to the Standard List prices delivered London Area.

	Over 2 tons		Over 100 Pieces under 2 tons		Under 100 Pieces under 2 tons	
Best Quality	+67½%		+97½%		+107½%	
B.S.S. Best do.	+10%	+67½%	+10%	+97½%	+10%	+107½%
Tested Quality	+37½%	+67½%	+37½%	+97½%	+37½%	+107½%
B.S.S. Tested do.	+47½%	+67½%	+47½%	+97½%	+47½%	+107½%

		£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths)	per 1,000	10	13	6
4 in. do.	,,	14	2	0

STONE

		£	s.	d.
Bath Stone—				
Monks Park	per ft. cube		7	10
St. Aldhelm Box Ground	,,		8	10
Delivered in railway trucks at South Lambeth B.R. Western Region				
Doulting Stone Random Blocks. Delivered London area	,,		8	4
Beer Stone. Delivered London area	,,		8	0
Portland Stone—				
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region	,,		8	1½
Yorkshire Stone—Blue Robin Hood Quality.				
Delivered to site London in 6-ton lots.				
9 in. × 3 in. Rubbed, weathered, throated and stooled cills	per ft. cube	3	4	3
12 in. × 6 in. do. do.	,,	2	6	0
12 in. × 3 in. Plain coping, twice throated ...	,,	1	15	4
12 in. × 3 in. Weathered and twice throated coping	,,	2	7	4
14 in. × 6 in. do. do.	,,	2	2	8
4½ in. × 9 in. Plinth, rubbed on top and face ...	,,	1	18	1
3 in. sawn two sides Slabs, random sizes ...	per ft. sup.		6	9

STONE—*continued*

		£	s.	d.
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork	per ft. cube	1	3	5
Do. do. fair one edge for fair faced brickwork		1	7	10
Hard York—				
12 in. ×2 in. Square Steps, rubbed on top and edge	per ft. run		8	2
14 in. × 3 in. Round-nosed Steps, rubbed on top and front	per ft. cube	2	3	8
12 in. ×6 in. Plain Steps, rubbed top and front	,,	1	18	3
2 in. Rubbed and Jointed Paving, given sizes	per ft. sup.		7	10
2 in. Sawn Paving, edges squared, in random sizes	per yd. sup	2	13	10

TILES and PANTILES

Delivered London area by road in 6 tons or over per 1,000

Machine-made Pantiles and French pattern Tiles from Lincolnshire district	29	8	0
Hand-made Pantiles Berkshire district	47	10	0
Hand-made Double Roman Bridgwater district	58	13	6
Hand-made 10½ × 6½ tiles Berkshire district	13	1	9
Machine-made 10½ × 6½ Staffordshire district	13	8	9
Hand-made Hip and Valley tiles per doz.	1	8	9
Machine-made Hip and Valley tiles do.	1	6	6
Concrete tiles 10½ × 6½	7	14	6
do. Interlocking (49S)	18	9	6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

24 × 12	113	0	4
22 × 12	93	16	0
22 × 11	84	15	0
20 × 12	79	19	6
20 × 10	74	12	0
18 × 10	53	18	9
18 × 9	47	5	6
16 × 10	44	7	0
16 × 8	34	10	6

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

Softwood—					
Joinery quality	Ex. Wharf	per standard	£105 to £125		
Carcassing quality	do.	,,	£95 to £100		
1 in. Tongued and Grooved Flooring	do.	,,	£106	0	0
Hardwood—					
Mahogany—African S.E.	do.	per ft. cube	1	5	0
do. Honduras do.	do.	,,	3	5	0
Oak European do.	do.	,,	1	18	6
do. Japanese do.	do.	,,	2	5	0
do. English Logs sawn	do.	,,	1	5	0
Teak 8 in. average S.E.	do.	,,	3	0	0
Walnut African Logs sawn	do.	,,	1	1	6

DOORS (in Lots 1-11)

Delivered London area.

1½ in. 4 Horizontal Panel Pattern 4 in. deal				
2 ft. 0 in. × 6 ft. 6 in.	each	1	12	0
2 ft. 3 in. × 6 ft. 6 in.	,,	1	13	0
2 ft. 6 in. × 6 ft. 6 in.	,,	1	14	0
2 ft. 9 in. × 6 ft. 6 in.	,,	1	16	6
2 in. do. but top panel open. Pattern 4 × G in deal				
2 ft. 6 in. × 6 ft. 6 in.	,,	2	9	0
2 ft. 9 in. × 6 ft. 6 in.	,,	2	11	6
2 in. Panel, top panel open. Pattern 2 × G in deal				
2 ft. 6 in. × 6 ft. 6 in.	,,	2	1	9
2 ft. 9 in. × 6 ft. 6 in.	,,	2	3	6

SUNDRIES

Delivered London area

1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton)	per yd.		5	8
1½ in. do. (67 yds. to 1 ton)	,,		7	4
2 in. do. (52 yds. to 1 ton)	,,		8	11½
2½ in. do. (45 yds. to 1 ton)	,,		10	3
3 in. do. (39 yds. to 1 ton)	,,		11	5½
Quantities under 1 ton add 1d. per ½ in. of thickness.				
¼ in. imported insulation Board, quantities over 5,000 sq. ft.	per 100 sq. ft.	2	2	6
¼ in. Hardboard do.	,,	2	3	6
⅛ in. do. do.	,,	3	5	0
½ in. Asbestos Flat Building Sheets	per yd. sup		3	2
Roofing Felt, 1-ply	,,		1	6
do. 2-ply	,,		1	9
Best Scotch Glue, in slabs	per ½ cwt.	5	0	0
do. pearl	,,	5	5	0
Croid Glue	28 lb.	2	5	0
Cut Nails 3 in. (1-ton lots)	per ton	56	5	0
do. 4 in. and up (1-ton lots)	,,	52	15	0
Wire Nails, 3 in. (4-cwt. lots)	per cwt.	2	16	3
do. 4 in. and up (4-cwt. lots)	,,	2	12	9

METALS

STEEL JOISTS, ETC.

Basis Joists—				
6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in. 12 in. × 6 in. plain cut to lengths delivered London area	per ton	38	7	6
Extra for sizes				
3 in. × 1½ in.	,,	3	10	0
3 in. × 3 in., 4 in. × 3 in., 5 in. × 2½ in.	,,	1	5	0
4 in. × 1½ in.	,,	3	0	0
4½ in. × 1½ in., 24 in. × 7½ in.	,,	2	0	0
5 in. × 3 in., 22 in. × 7 in.	,,	1	0	0
6 in. × 3 in.	per ton	1	10	0
9 in. × 7 in.	,,		5	0
10 in. × 4½ in. 12 in. × 5 in.	,,		15	0
5 in. × 4½ in. 6 in. × 4½ in. 7 in. × 3½ in. 7 in. × 4 in. 8 in. × 4 in. 9 in. × 4 in. 10 in. × 5 in. 10 in. × 8 in. 12 in. × 8 in. 13 in. × 5 in. 14 in. × 6 in. 14 in. × 8 in. 15 in. × 5 in. 15 in. × 6 in. 16 in. × 6 in. 16 in. × 8 in. 18 in. × 6 in. 18 in. × 7 in. 18 in. × 8 in. 20 in. × 6½ in. 20 in. × 7½ in.	,,		10	0
Steel angles average price	,,	39	12	6
Steel tees average price	,,	40	12	6
Fabricated work delivered London—				
R.S. Joists cut and fitted	,,	53	7	6
Compound girders	,,	58	12	6
Stanchions	,,	63	17	6
Compound stanchions	,,	67	7	6
In Roof Work—Trusses and Purlins	,,	79	7	6
Average prices not for awkward work.				
Mild Steel Ferro-Concrete bars to BSS785 ex London				
Stock ¼ in. diam., and upwards	,,	39	14	6
¼ in. diam.	...per ton extra	3	12	0
⅜ in. do.	,,	2	17	0
½ in. do.	,,	2	2	0
⅝ in. do.	,,	1	7	0

MILD STEEL TUBES

Tubes to BSS1387 and Fittings. List prices and following discounts:

Galvanised Tube—	W.I. Fittings		Malleable Fittings
Class A — 1¾%			
Class B + 7¼%	Light	+ 23½%	Malleable List — 35% + 40%
Class C + 23¾%	Heavy	+ 30¾%	
Black—			
Class A — 22%			
Class B — 11½%	Light	+ 11%	Malleable List — 35%
Class C + ¾%	Heavy	+ 18½%	

C.I. HALF-ROUND GUTTERS

Delivered London per yd. in 6-ft. lengths

	Gutters	Nozzles	Stop Ends
3 in.	3/2	2/9	/10
3½ in.	3/5½	3/–	/10
4 in.	4/5½	3/5	1/2
4½ in.	4/10½	3/9	1/6
5 in.	5/5½	4/2	1/8

C.I.O.G. GUTTERS

3 in.	4/1	3/8	/11
3½ in.	4/6½	3/8	1/2
4 in.	5/–	3/9	1/6
4½ in.	5/5½	4/5	1/8
5 in.	5/11	5/1	1/11

C.I. RAIN-WATER PIPES

Per yd. in 6-ft. lengths	Pipe	Bends	Branches
2 in.	6/5½	3/5	4/10
2½ in.	6/9	3/9	6/8
3 in.	7/7	4/9	7/3
3½ in.	8/7	5/8	8/7
4 in.	9/11½	6/11	10/2

L.C.C. COATED SOIL PIPES

2 in.	7/7½	5/10	7/2
2½ in.	8/1	6/6	8/11
3 in.	9/0½	7/2	10/8
3½ in.	10/1½	8/11	12/5
4 in.	11/6½	10/–	14/7

Above prices for gutters, rain-water and soil pipes for under 3 cwt. lot only. Lots over 3 cwt. see List No. 3200 dated May 1, 1952, plus 10% and tonnage allowance. 4-ton lots 5 per cent, 2-ton lots 2½ per cent.

L.C.C. COATED DRAIN PIPES

In 9-fts.	cwt. qr. lb.	per yd.	Bends	Branches
4 in.	1 1 17	24/5	16/6	28/9
6 in.	2 0 1	36/3	34/3	58/9

ASBESTOS RAIN-WATER PIPES AND FITTINGS

Orders under £30 less 12½ per cent. discount.
Orders over £30 less 17½ per cent. discount.

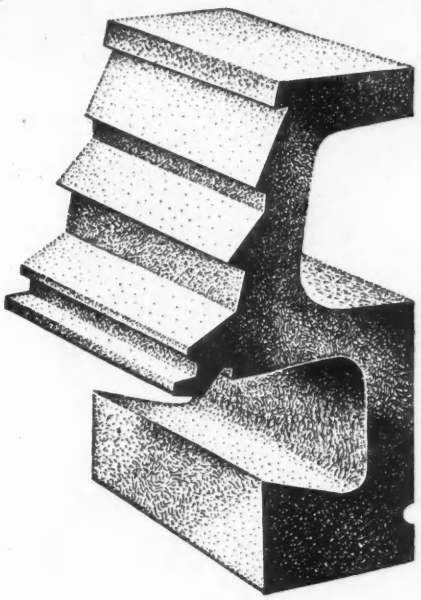
		2 in.	2½ in.	3 in.	4 in.
Pipes 6-ft. lengths	...per yd.	3/9	4/–	4/10	6/5
Shoes	... each	2/5	2/8	3/2	4/3
Single Branches	,,	3/9	4/6	5/4	7/6
Bends square or obtuse	,,	2/8	2/11	3/9	5/4
Swan Necks 4½ in. proj.	,,	2/11	3/9	4/3	5/11
do. 6 in. do.	,,	3/2	3/9	4/10	6/5

ASBESTOS O.G. GUTTERS AND FITTINGS

		4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths	...per yd.	3/7	3/11	4/8	5/7½
Drop ends	... each	2/10	3/4	3/10	4/7
Stop Ends	,,	/10	/11	1/–	1/2
Angles	,,	2/11	3/5	4/1	4/10
Nozzles	,,	2/10	3/4	3/10	4/7
Union Clips	,,	1/5	1/8	2/1	2/5

ASBESTOS HALF-ROUND GUTTERS AND FITTINGS

		3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths	...per yd.	2/6	2/11½	3/0½	3/7	5/–
Drop ends	... each	2/1	2/5	2/8	2/11	4/3
Stop ends	,,	/9	/10	/11	1/–	1/2
Angles	,,	2/5	2/8	2/11	3/2	4/3
Nozzles	,,	2/1	2/5	2/8	2/11	4/3
Union Clips	,,	1/–	1/1	1/2	1/4	2/–



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Every discerning Architect and Builder throughout the British Isles will want to know all about me — that is why they have produced a booklet which you can readily obtain on application to the address below. In the interest of good building you should send for your copy today.

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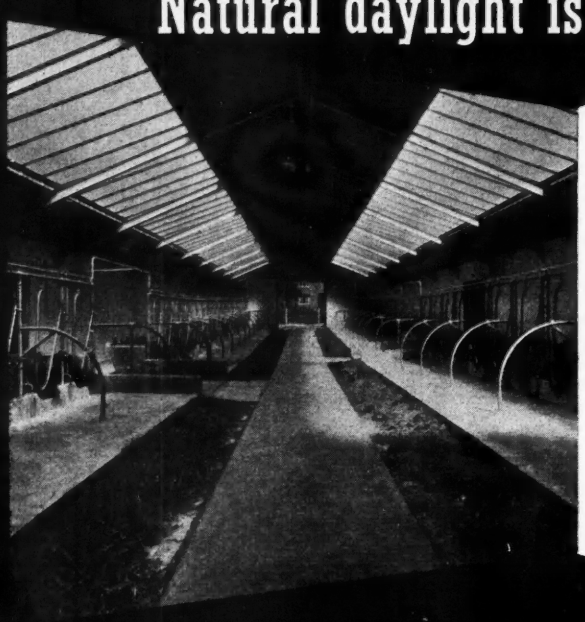

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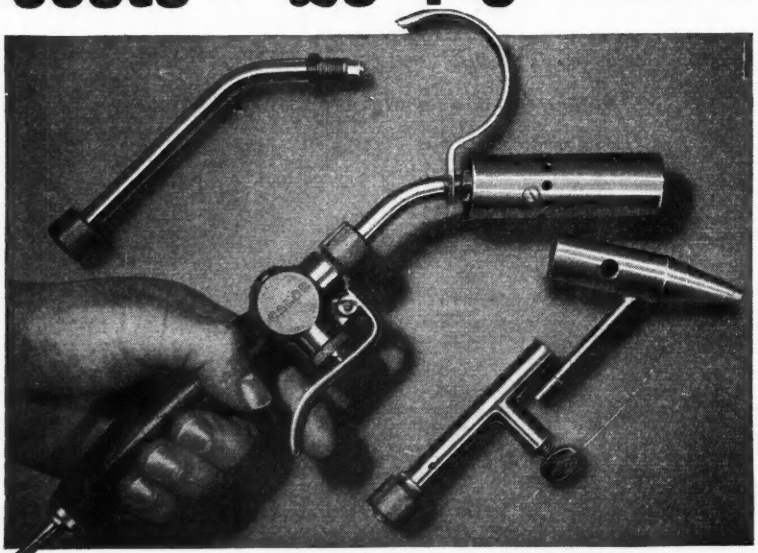

Good news! The new Multi-purpose Blowtorch specially designed by the 'Calor' Gas Research Laboratories now costs less to install. For the hire charge on each 'Calor' Gas cylinder has recently been reduced by 30/-. The new torch costs only £3.1.6, complete with special attachments for brazing, soldering and paint burning. These are attached or removed by a simple knurled nut. There is a ladder hook attached to the paint burning extension for added convenience. And the unique trigger release gives a substantial saving in gas consumption. Operating costs are kept very low. The model is available, both as a complete set or single unit—on order from 'Calor' Gas dealers everywhere.

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SCOTLAND, NORTHERN IRELAND & EIRE: *46-48 St. Andrew's Sq., Glasgow, C.1.*

METALS—*continued*

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	40 2 6
Mild Steel Bars	37 17 6
Mild Steel Hoops	39 5 0

	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft sheets C.R. and C.A.—	
20 gauge	46 14 6
24 gauge	47 19 6
26 gauge	49 9 6
Galvanised Corrugated sheets 6 ft. to 9 ft.—	
20 gauge	53 12 0
24 gauge	55 12 0
26 gauge	58 7 0
Galvanised Flat sheets C.R. and C.A.—	
20 gauge	54 12 0
24 gauge	56 12 0
26 gauge	59 7 0

Plumbers' Brass Work, Copper, Zinc, etc.

Delivered in London area.

All per doz.	M.O.H. ½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron	73/6	109/3				
Toilet bib cocks for iron	94/6	135/6				
Screwdown stop cocks for iron	63/-	91/3	179/6	308/9	441/-	778/-
do. with two unions for lead	85/-	126/-	223/9	400/-	529/-	1178/-
Double nut boiler screws	15/9	22/-	40/-	41/-	56/9	80/-
Heavy Croydon ball valves	65/-	148/-	226/9	413/9	586/-	
Plumbers' union brass lead to iron	16/6	20/-	33/-	57/9	71/-	138/9
	1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
Caps and screws	28/6	34/9	50/6	78/9	100/9	131/3
Brass sleeves			26/3	26/3	47/3	63/-, 64/-
			1¼ × 6 lb.	1½ × 6 lb.	2 × 7 lb.	3 × 7 lb.
Lead P. trap with brass cleaning screws	60/9		75/9	121/-		207/-
Lead S. trap do.	73/3		91/-	149/-		267/9

Solder	s. d.
Plumbers' per lb.	3 3
Tinmen's ,,	4 0
Blow pipe ,,	4 1

Copper tubes BSS 659/1944 on the basic price of 28½d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 3 cwt.

	Extra d.	Total per lb. d.
⅛ in. × 19 gauge	12½	41
¼ in. × 19 ,,	10½	39½
1 in. × 18 ,,	9½	38
1¼ in. × 18 ,,	8½	37½
1½ in. × 18 ,,	8½	37½
2 in. × 17 ,,	10½	39

		£ s. d.
Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras	per ton	308 5 0
Sheet Zinc, 10 gauge (25 SWG) 5 cwt. lots upwards	per cwt.	6 16 0
do. 12 gauge (23 SWG) do.	,,	6 14 0
do. 14 gauge (21 SWG) do.	,,	6 12 9
Brass tubes basic price, plus gauge and manufacturing extras	per lb.	1 11½

LEAD SHEET AND PIPES

Basis selling price in minimum one-ton delivery to one address in London or Home Counties

		£ s. d.
Lead Sheet, English, 3½ lb. substance and upwards	per ton	136 10 0
Lead Water Pipe in coils	,,	137 15 0
Lead Soil Pipe, 10 ft. or over 2 in. to 4 in. dia.	,,	139 5 0
do. over 4 in. dia.	,,	141 5 0
Lead Gas or Untinned Compo pipe	,,	139 5 0
Extras over Basis for quantities under 1 ton		
5 cwt. and under 1 ton	per cwt.	2 0
3 cwt. do. 5 cwt.	,,	4 0
1 cwt. do. 3 cwt.	,,	6 0

Smaller quantities than 1 cwt. priced specially.
Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.
Allowance for Old Lead, collected £92 0s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

		£ s. d.
Coarse Pink in 1-ton loads and over Delivered on Site	per ton	7 6 6
do. White do. do.	,,	7 14 3
Sirapite Coarse do. do.	,,	7 9 0
do. Fine do. do.	,,	7 17 0
Blue Lias Lime in 6-ton loads	,,	6 9 6
Hydrated Lime do.	,,	5 12 6
Lump Lime do.	,,	5 2 0
White Keen's or Parian Cement in 1-ton loads	,,	10 4 0
Pink Keen's or Parian Cement in 1-ton loads	,,	9 18 6
Granite Chips in 6-ton loads	,,	2 6 3
Hair	per cwt.	4 17 6
Gypsum Plaster Lath or Base Board ⅜ in. thick 600 yds. and over in one delivery. Delivered site	per yd.	2 2
1,200 yds.	,,	2 1½
Gypsum Plaster Wall Boards, 3 and 4 ft. wide, 6 to 12 ft., ⅜ in. thick, 600 yds. and over in one delivery. Delivered site	,,	2 5
1,200 yds.	,,	2 4½

PAINT AND DISTEMPER

Delivered London area

		£ s. d.
Ceiling Distemper	per cwt.	1 12 0
Washable Distemper	,,	5 12 0
Gloss Paint	per gal.	2 13 0
Snowcem cement paint (in 1 cwt. drums)	per cwt.	3 11 0

Lead Products and Oils.

Ground White Lead, 1 cwt. kegs	per cwt.	8 10 0
Genuine White Lead Paint, 20 gal. lots in 1 gal. tins	per gal.	3 0 0
Genuine Red Lead, Dry, 1 cwt. keg	per cwt.	6 19 6
Genuine Linseed Oil Putty, 1 cwt. keg	,,	2 7 0
Size XD quality, 28 lb.	per tin	9 0
Raw Linseed Oil (5 gal.) Drums extra	per gal	11 6
Boiled Linseed Oil (5 gal.) do.	,,	12 0

Sundries.

		s. d.
Turpentine substitute (5 gal.) drums extra	,,	5 6½
do. do. (40 gal.) do. do.	,,	4 8½
Solignum, Brown (5 gal. cans) Exterior	,,	6 6
Creosote (40 gal. barrels)	,,	2 0
Paste Powder (1 lb. packets)	per lb.	1 6
White Lining Paper	per piece	1 0

VARNISHES, etc.

Delivered London area.

		£ s. d.
Oak Varnish, Outside or Inside	per gal.	1 12 6
Oak Pale Copal do.	,,	1 15 0
Hard Drying Oak for Inside	,,	1 17 6
Crystal Paper Varnish do.	,,	2 2 6
Eggshell Flat Varnish do.	,,	2 2 6
Finest Carriage Varnish	,,	2 10 0
Front Door Varnish	,,	1 17 6
Japan Gold Size	,,	1 10 0
Black Japan	,,	1 5 0
Brunswick Black	,,	1 0 0
Berlin Black	,,	1 5 0
Terebene	,,	1 5 0
Knotting (1 gal. bottles free)	,,	2 0 0
French and Brush Polish (do.)	,,	1 13 0

GLASS

Delivered London area.

	Per ft. super s. d.
18 oz. Sheet Glass, Ordinary Glazing Quality. Cut Sizes	5½
24 oz. ,, ,, ,, ,, ,, ,,	7½
26 oz. ,, ,, ,, ,, ,, ,,	9½
32 oz. ,, ,, ,, ,, ,, ,,	1 0
⅛ in. Rolled Plate	9
⅛ in. and ¼ in. Rough Cast	1 0
⅛ in. Figured Rolled and Cathedral, Standard patterns:	
White	9
do. Standard Tints	1 4½
do. Special Tints	2 9
⅛ in. Cross Flexon, Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating	1 1
¼ in. Wired Cast	1 2
¼ in. Georgian Wired Cast	1 2½

Hollow Glass Blocks—	Each
P.B.2 5¾ × 5¾ × 3¾ in.	2 9
P.B.3 7¾ × 7¾ × 3¾ in.	4 2
P.B.32 7¾ × 7¾ × 3¾ in.	4 2
Radiused Corner Blocks to match up with—	
P.B.2	5 3
P.B.3	6 9
P.B.32	6 9

⅛ in. Polished Plate Glass, G.G. Quality—	Per ft. super
In plates not exceeding 2 ft. sup.	3 7
,, ,, ,, 5 ft. sup.	4 5
,, ,, ,, 45 ft. sup.	5 1
,, ,, ,, 100 ft. sup.	5 6

¼ in. Polished Plate, extra sizes, *i.e.*, plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality—

Not exceeding 135 ft. sup. or 250 in. one way or 135 in. both ways	8 4
Not exceeding 180 ft. sup., or ditto	11 3
Not exceeding 200 ft. sup., or ditto	16 0

Plates exceeding 200 ft. sup. prices on application.
Substances other than ¼ in. Polished Plate at Special Prices.

Quantity Tariff—Sheet and Sundry Glass

The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass	Minimum quantity.	Per ft. super s. d.
18 oz. sheet O.Q.	3,000	4
24 oz. ,, ,,	2,000	5½
26 oz. ,, ,,	2,000	7½
32 oz. ,, ,,	2,000	9½
⅛ in. Rolled Plate	1,000	7½
⅛ in. Figured Rolled and Cathedral Standard Patterns, White	1,000	7½
⅛ in. Cross Flexon, Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte	1,000	10½
⅛ in. and ¼ in. Rolled Plate or Rough Cast	2,000	10½
¼ in. Wired Cast, Hexagonal	2,000	11½
¼ in. Georgian Wired Cast	2,000	1 0½

The Builder

CURRENT RATES OF WAGES

AS FROM MAY 24, 1954. **(Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)**

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1	A2	A3
Craftsmen	3/9	3/8½	3/8	3/7½
Labourers	3/3½	3/3	3/2½	3/2

Town.	Grade.
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A2
Accrington	A
Addlestone	A
Aldeburgh	A2
Aldershot District	A2
Alfreton U.D.	A
Alnwick	A1
Altrincham	A
Amble	A1
Amersham	A1
Ammanford	A
Andover	A2
Ardingly	A2
Arundel	A2
Ascot	A2
Ashby-de-la-Zouch U.D.	A
Ashby Woulds U.D.	A
Ashford (Kent)	A2
Ashford (Middlesex)	A
Ashington	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A2
Atherstone R.D. (parts of)	A
Aylesbury	A2
Aylesby (Yorks)	A
Aylesham	A2
Bagshot	A2
Bakewell U.D.	A2
Banbury	A2
Barnard Castle U.D.	A
Barnoldswick U.D.	A1
Barnsley	A
Barrow-in-Furness	A
Barrow-upon-Soar R.D. (exc. Thrussington A2)	A
Barry	A
Basford R.D. (exc. Willough-by-on-the-Wolds A2)	A
Basingstoke	A1
Bath	A
Batley	A
Baxterley	A1
Beaconsfield & District	A1
Beamish	A
Bearl	A
Bearpark	A
Beccles	A2
Bedale R.D.	A
Bedford	A
Bedlington	A
Bedwas	A
Beeston & Stapleford U.D.	A
Belper U.D.	A
Belton	A
Berkhamsted	A
Berrington	A1
Berwick District	A
Beverley	A
Bexhill-on-Sea	A2
Biggleswade	A2
Billericay	A
Billing	A
Billingham U.D.	A
Bilsthorpe	A
Birchington	A2
Birkenhead	*
Birmingham C.B.	†A
Bishop Auckland	A
Bishop's Stortford	A
Bispham	A
Blackburn	A
Blackpool	A
Blackwell R.D.	A
Blaydon U.D.	A
Blidworth	A
Blyth	A
Bognor Regis	A2
Boldon U.D.	A
Bolsover U.D.	A
Bolton	A
Bourne End	A1
Bournemouth District	A
Bracknell	A2
Bradford	A
Bradford-on-Avon	A2
Braintree	A1
Breconshire, County of...	‡A2
Brent Knoll	A2
Brentwood	A
Bridlington	A
Brierfield	A
Brighouse	A
Brighton	A
Bristol	A
Broadstairs	A2
Bromsgrove U.D.	A
Brough	A
Broughton (Cheshire)	A
Buckley	A
Bungay	A2
Burnham-on-Crouch	A2
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A1
Buxton	A
Byfleet	A1
Calder Valley	A
Cambridge	A
Cannock U.D.	A
Canterbury	A2
Cardiff	A
Cardiganshire, County of	‡A2
Carlisle	A
Carmarthenshire, Cnty of	‡A2
Carnarvonshire, Cnty. of	‡A3
Carnforth	A
Castleford	A
Caterham	A
Chapel-en-le-Frith	A
Charmy Down	A
Chatham & District	A1
Cheadle (Staffs) R.D.	A
Chelmsford	A
Cheltenham	A
Chepstow	A1
Chertsey	A
Chester	A
Chesterfield M.B.	A
Chesterfield R.D.	A
Chester-le-Street U.D.	A
Chichester	A2
Chippenham (inc. Chippen-ham Within and Harden-huish	A2
Chorley	A
Clacton	A1
Cleethorpes	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville U.D.	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett	A
Conway	A1
Cornwall, County of	‡A2
Coventry C.B.	A
Cranbrook	A2
Cranleigh	A2
Crawley (Sussex)	A2
Crewe	A
Cromer	A1
Crowborough	A2
Cuckfield	A2
Dalton-in-Furness	A
Darlington District	A
Darwen	A
Deal	A2
Denbigh Town	A2
Derby C.B.	A
Devizes	A2
Devon, County of	‡A2
Dewsbury	A
Didcot	A2
Diss	A2
Doncaster C.B.	A
Dorking	A
Dorset, County of (except-ing Poole, Swanage and Wimborne A1)	A2
Dover	A2
Dovercourt	A
Driffield U.D.	A1
Droitwich M.B.	A1
Dudley M.B.	A
Dunstable	A
Durham City	A
Eastbourne	A1
E. Glam. & Mon. Val.	A
East Grinstead District	A2
Eastwood (Notts.) U.D.	A
Ebbw Vale & District	A
Edenbridge	A2
Ely	A2
Epping	A
Exeter	A
Fakenham	A2
Falmouth	A2
Fareham	A
Faversham	A2
Felixstowe	A1
Filey U.D.	A
Fleetwood	A
Flint	A
Folkestone	A2
Frinton	A1
Frome	A1
Gainsborough U.D.	A
Gateshead	A
Gillingham (Kent)	A1
Glossop	A
Gloucester	A
Gloucestershire, Cnty. of	‡A2
Godalming	A2
Goole M.B.	A
Gosport	A
Grantham M.B.	A
Gravesend	A
Great Yarmouth	A
Grimsby C.B. & R.D.(part)	A
Grimsby R.D. (remainder)	A2
Guildford District	A2
Guilsborough	A1
Guiseley	A
Halesowen M.B.	A
Halifax	A
Halstead	A2
Haresfield	A1
Harlow	A
Harpenden	A
Harrogate	A
Hartlepool	A
Harwich	A
Haslemere	A2
Hastings	A2
Hatfield (Herts.)	A
Haywards Heath	A2
Hemel Hempstead	A
Henley-on-Thames	A2
Hereford	A2
Herefordshire, Cnty. of	‡A2
Herne Bay	A2
Hertford	A
Hexham U.D.	A
Heysham	A
High Wycombe	A1
Highworth	A2
Hinckley U.D.	A
Hitchin	A
Hoddesdon	A
Horley	A2
Horsham	A2
Horwich	A
Huddersfield	A
Hull	A
Hunstanton	A2
Huntingdon (Staffs)	A
Ilkley	A
Ingatestone	A1
Ipswich	A
Isle of Sheppey	A2
Isle of Thanet	A2
Isle of Wight	A2
Jarrow M.B.	A
Keighley	A
Kendal	A
Kenilworth U.D.	A
Kettering M.B.	A
Keynsham	A
Kidderminster M.B.	A
King's Lynn	A1
Kingskerswell	A1
Kingsteignton	A1
Kirkham	A
Knaresborough U.D.	A
Knowle	A1
Lancaster	A
Leamington M. B.	A
Leatherhead	A
Leeds	A
Leicester C.B.	A
Leighton Buzzard	A1
Letchworth	A1
Lewes	A2
Lichfield M.B.	A
Lincoln C.B.	A
Littlehampton	A2
Liverpool	*
Llandudno	A1
Llanelly	A
London	*
Long Eaton	A
Loughborough M.B.	A
Louth M.B.	A2
Lowestoft	A
Loxton	A2
Luton	A
Lyneham (Devon)	A2
Macclesfield	A
Maidenhead	A1
Maidstone	A1
Maltby	A
Maldon (Essex)	A1
Malvern U.D.	A1
Manchester	A
Manningtree	A1
Mansfield M.B.	A
March	A2
Margate	A2
Market Harborough U.D.	A
Maryport	A
Matlock U.D.	A1
Melksham	A2
Melton Constable	A2
Melton Mowbray U.D.	A1
Merthyr	A
Middlesbrough	A
Middleton	A
Middlewich	A
Milford Haven	A1
Morecambe	A
Morley	A
Mundesley	A2
Nantwich	A
Nelson	A
Newark-on-Trent R.D.	A1
Newbury	A2
Newcastle-on-Tyne	A
Newcastle-under-Lyme	A
New Forest District	A1
Newmarket	A1
Newport, Mon.	A
Newport Pagnell	A2
Newton Abbot	A1
Northallerton Dist.	A
Northampton C.B.	A
North Shields	A
Norton Radstock	A1
Norwich	A
Nottingham C.B.	A
Nuneaton M.B.	A
Oakham U.D.	A2
Oldham	A
Ongar	A
Ormskirk	A
Ossett and Horbury	A
Oxford	A
Oxted	A1
Paignton	A1
Peterborough	A
" Soke	A1
Pickering	A3
Plymouth	A
Pontefract	A
Pontypridd District	A
Portishead	A
Portland Stoneyards	A
Portsmouth	A
Port Talbot	A
Preston	A
Pudsey	A
Pulborough	A2
Radnorshire, County of	‡A2
Ramsgate	A2
Rayleigh	A
Reading	A
Redcar B.	A
Redditch U.D.	A
Redhill and Reigate	A
Ripon	A3
Rochdale	A
Rochester	A1
Rotherham	A
Rugby M.B.	A
Saffron Walden	A2
St. Albans	A
St. Helens	A
St. Neots	A2
Salisbury City	A2
Salisbury Plain	A2
Sawbridgeworth	A
Saxmundham	A2
Scarborough	A
Scunthorpe	A
Selby	A
Sevenoaks	A1
Sheerness	A2
Sheffield	A
Shipley	A
Shoeburyness	A
Shoreham	A
Shrewsbury M.B.	A
Sittingbourne	A2
Skegness U.D.	A1
Skipton U.D.	A
Sleaford U.D.	A2
Slough	A1
Smethwick C.B.	†A
Snettisham	A2
Somerset, County of	‡A2
Southampton	A
Southend-on-Sea Dist.	A
Southport	A
South Shields C.B.	A
Spalding U.D.	A2
Stafford M.B.	A
Staines	A
Stamford M.B.	A1
Stantonwick	A
Stevenage	A
Stockport	A
Stockton R.D.	A
Stockton-on-Tees	A
Stoke-on-Trent C.B.	A
Stoke Orchard	A1
Stourbridge M.B.	A
Stourport U.D.	A
Stowmarket	A1
Stratford-on-Avon M.B.	A
Sunderland District	A
Sunningdale	A1
Sutton Coldfield M.B.	A
Swaffham	A2
Swanage	A1
Swansea	A
Swindon	A1
Swinton U.D.	A
Tamworth M.B.	A
Tenterden	A2
Tewkesbury	A1
Thames Haven	A
Thetford	A2
Thorpe Bay	A
Thurrock U.D.C. Area	A
" North of, to Billericay	A
Tilbury	A
Todmorden	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Trowbridge	A2
Tunbridge Wells	A1
Tynemouth C.B.	A
Uppingham (Salop)	A1
Uttoxeter U.D.	A2
Wakefield	A
Wallsend B.	A
Walsall C.B.	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A2
Warrington	A
Warwick M.B.	A
Wellington U.D.	A
Wells (Norfolk)	A2
Welwyn	A
Welwyn Gar. City	A
West Bromwich C.B.	A
Westbury	A2
Westcliff-on-Sea	A
Westerham	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth	A1
Whitby U.D.	A1
Whitstable and District	A2
Wickford	A
Widnes	A
Wigan	A
Wigton	A2
Willington	A
Wilmslow	A
Wilts. County of	‡A2
Winchester	A1
Windermere	A3
Windsor and Eton	A1
Wisbech	A2
Witham	A1
Woking (District)	A1
Wokingham	A2
Wolverhampton C.B.	A
Woodbridge	A2
Worcester C.B.	A
Workington	A
Worksop M.B.	A
Worthing	A2
Wrexham (incl. Cefn)	A
Wroughton	A1
Wylam	A
Wymondham	A2
York	A

*For Birkenhead, Liverpool and London the rates are:—Craftsmen, 3s. 10½d.; Labourers, 3s. 5d. In the case of London the rate beyond the 12-mile radius is:—Craftsmen, 3s. 10d.; Labourers, 3s. 4½d. † Plus 2d. per working day. ‡ This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters, Joiners and Plumbers in all towns and districts receive 2d. per day Tool Allowances.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 2s. 8d. per hour. Women introduced to carry out work other than craft processes, 2s. 4d. per hour.

For Building Trade Wages in Scotland see page 482

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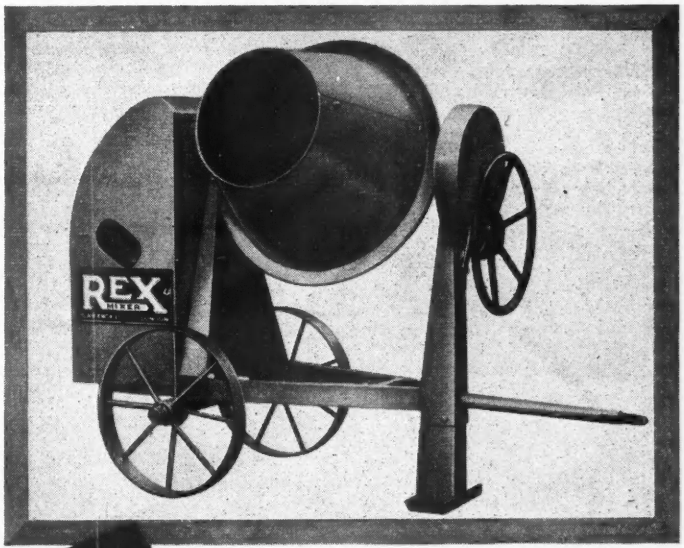

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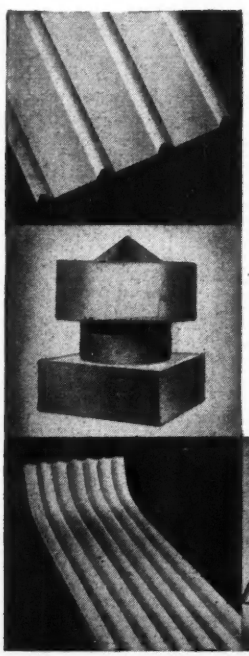

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NEWS IN BRIEF

TIMBER COURSE

A one-week timber course will be held by Dr. H. E. Desch, FRICS, timber consultant, 11, Haymarket, SW1, from September 27 to October 2, assembling at Southfield House, Oxford, on September 26.

RIBA FINAL

Mr. Geoffrey J. Thomas, of Guildford, Surrey, who passed the RIBA Final Examination in December, 1950, has been awarded a mark of distinction for his thesis.

SURVEYOR RETIRES

Mr. George P. Clingan, City Building Surveyor to Liverpool, has retired after 52 years' service. He will continue for a period in a consultative capacity.

ST. ALBANS APPOINTMENT

Mr. Harold Wilkinson, FRICS, Surveyor and Sanitary Inspector to Banbury Rural District Council, Oxon, has been appointed Architect, Surveyor and Water Engineer to St. Albans Rural District Council, Hertfordshire, in succession to Mr. C. H. Huskinson, MIMunE.

ADVICE ON SELF-BUILD

The organisation formerly known as the London and National Self Build Housing Association has ceased operation and is replaced by a completely new organisation —the Self-Build Advisory Service, with offices at 15, Whitehall, SW1. The Secretary is Mr. D. H. Harris.

HOUSING MANAGEMENT

Mr. Harold Macmillan, Minister of Housing and Local Government, has appointed Mr. P. L. Leigh-Breese to be chairman of the housing management sub-committee of the Central Housing Advisory Committee in succession to Mr. Henry Brooke, MP, who was recently appointed Financial Secretary to the Treasury.

£30m. POWER PLANT

The foundation-stone of the Marchwood power station, being built on a site opposite Southampton New Docks, was laid by the Lord Lieutenant of Hampshire, the Duke of Wellington, on September 8. The station, which will cost £30m., is expected to produce its first electricity by the end of next year, but work on it will continue until 1962.

RE DINNER-DANCE

A dinner-dance with cabaret is to be held by the London Group of the Royal Engineers' Association on October 2 at the Empire Restaurant, Wilton-street, SW1. The guests of honour will be Lieut.-General Sir Philip Neame, VC, KBE, CB, DSO, (Representative Colonel Commandant of the Corps of Royal Engineers) and Lady Neame. Invitations are being extended to all those ex-Royal Engineers in and around London, and especially to those within electrical, engineering and building organisations in that area. Application for tickets should be made to Mr. J. S. Pearson, Room 31, Horse Guards, Whitehall, SW1.

GTMA ACTIVITIES

The annual general meeting of the Gauge and Tool Makers' Association was held at the Savoy Hotel, London, on September 14, when a report on the activities of the previous year was given. A party of 42 members of the Association are visiting Milan, Italy, from September 17 to 21, to attend the fourth European Machine Tool Exhibition. A new publication entitled "Apprentice Training in the Gauge and Tool Industry" is shortly to be issued, and copies, price 1s., will be available from the Association at Standbrook House, 2-5, Old Bond-street, W1.

BUILDER FINED UNDER BY-LAWS

A man who had built 500 houses at Bridlington (Yorks), yet who built a bungalow to roof level without submitting plans to the Town Council, was fined a total of £6 and ordered to pay six guineas costs at Bridlington Magistrates' Court on September 8 on six summonses issued under the building by-laws. He was 70-years-old Mr. Arthur Bacon, of Queensgate, Bridlington, who pleaded guilty. The Deputy Town Clerk, Mr. H. D. Hocking, said that although there were six summonses, many others could have been brought. Mr. Bacon had had the opportunity to put things right, and had now submitted plans. He told the Court that it was a matter of trying to find work for men. "When you reach 70 years of age, and get out in the morning, you meet someone and forget," he added.

BUILDING SURVEYORS' INSTITUTE

Annual General Meeting

AT the annual general meeting of the Building Surveyors' Institute held on September 11, Mr. W. Alexander, ARIBA, MRSanI, head of the Department of Building of the Sheffield School of Technology, relinquishing the office of president of the Institute. Mr. F. W. Riches, a senior maintenance surveyor of the LCC, was installed as the new president and Mr. H. T. Paton, as the new vice-president.

The report of the council presented to members at the meeting recorded a year of great progress. Membership had very nearly doubled; the financial strength of the Institute continued to improve; the headquarters had been moved from Sheffield to London, the Institute had achieved the benefits of incorporation, and an examination syllabus had been approved and introduced. The report and accounts were adopted.

After the re-election of the council, MR. W. ALEXANDER, the retiring president, reviewed the development of the Institute since its inauguration, and paid tribute to Mr. G. A. Wain, of Sheffield, who was responsible for the founding of the Institute, and was its first secretary. Mr. Alexander said that a system of examinations had been prepared and Higher National Diplomas and Certificates were accepted as exemption from the Institute's Final examinations.

The new president, MR. F. W. RICHES, paid tribute to the past-president and announced that the executive council had unanimously resolved that, in recognition of Mr. Alexander's great services to the Institute, he be elected its first honorary member.

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CONVERSION OF OLDER HOUSES

Bristol Corporation's Lead

BRISTOL, a city which probably has more Regency and early Victorian buildings than any other similar area in the country, has embarked on a large-scale scheme for converting them into modern flats, writes a correspondent.

Although wishing to encourage private enterprise, the Corporation has decided to do much of the work itself, and at West Mall, Clifton, two "exhibition" houses which have been so treated by the local authority are on view "to show private owners and owner-occupiers how they can carry out improvement schemes to such property" and claim up to £400 per house towards the cost of conversion.

"Few people have realised the facilities offered under the scheme," says an official statement, "and in Bristol only 300 such applications have been made."

The Regency houses at West Mall are a typical example of the major type of flat conversion being undertaken at Bristol.

The two houses were purchased for £3,500, and a scheme was undertaken for converting them into eight self-contained flats at a cost of £7,100. The inclusive rents of the flats range from 28s. to 43s. a week.

Another old house at Albemarle Row was purchased for £10, but £1,600 was spent on repairs and the cost of improvements was £5,054. The total net rents of the four flats after conversion were £6 14s. 1d. It is pointed out that for this work a private owner would have been eligible for the maximum grant of £400 per unit of accommodation provided, *i.e.*, £1,600.

Opening this "New Life for Old Houses" exhibition recently, ALD. C. R. GILL, chairman of the housing committee, said there were 10,000 houses in Bristol unfit to live in, and 20,000 more were on the verge of that condition. There was a danger that many of them might have to be demolished if they were not "taken in hand."

MR. C. H. SMITH, the Ministry's principal housing officer for the region, said it was a mystery why so few applications for grant had been made. Perhaps it was that people could not believe it was true that the Government were giving them money. This was a great opportunity for owner-occupiers living in houses which were too big for them to have them improved and made a paying proposition.

TRADE NEWS

FITTINGS FOR UNESCO HQ

N. G. Bailey and Co., Ltd., of Leeds, have been selected to tender for the electrical fittings installation for the headquarters of UNESCO to be built in Paris. It is estimated that the cost of the electrical work on the new building will be approximately £143,000.

AIRCRAFT CRASH TENDERS

A new British fire tender that is claimed to revolutionise the methods of fighting aircraft crash fires was one of the safety appliances seen at the Farnborough flying display. This new tender, designed and built as a private venture by the Pyrene Company, Ltd., can concentrate jets of fire-extinguishing foam on a blazing aircraft at the rate of 10,000 gallons in two minutes.

CURVED RADIATORS

Curved radiators of the standard type to fit recesses such as bow windows are now being produced by Steel Radiators, Ltd., Southall, Middlesex, in addition to their usual range of wall radiators. These include the "Stelrad" angled wall radiators to fit bay windows, as well as a double radiator for use where extra heating surface is required but retaining the architectural features of a standard wall type radiator.

POWDER RESIN GLUE

A leaflet providing information on their Cascamite "One-Shot" resin glue has now been issued by Leicester, Lovell and Co., Ltd., of North Baddesley, Southampton. It is a urea-formaldehyde resin in powder form that merely requires mixing with cold water in one operation, and can then be applied to the joint. No hardener additions are understood to be necessary, as a hardening agent is already incorporated in the powder, and owing to the fact that it can be used cold, large areas can be glued without risk of chilling. It is claimed that if kept in a cool, dry place, it has a storage life of more than a year.

ALUMINIUM TILES

A booklet has been produced by Prefatile (GB), Ltd., 78, Buckingham-gate, SW1, containing data and diagrams on their new range of aluminium tiles, together with photographs of various installations. These metal interlocking roofing tiles are understood to have the advantages of great durability and minimum maintenance, coupled with a low initial cost and greater coverage than other materials (three Prefatiles giving one sq. yd. of roofing when fixed). Despite their light weight, they have been proved to carry a safe load of 40 lb. per sq. ft. (24-gauge material), and their fixing clips do not pierce the roof surface, so as to prevent leakage. These tiles, with their patent interlocking joints, are claimed to provide wind- and rain-tight roofing at pitches from nine degrees upwards, while still permitting the roof to breathe.

METAL PRIMER

A new metal primer has been introduced by Blundell, Spence and Co., Ltd., to complete the range of primers manufactured by the company for all types of decorative work. Known as "Creole" metal primer, it is a product similar in quality to "Creole" wood primer (hitherto known as "Creole" priming liquid paint). In addition, Blundells have recently included in their range of paint a new wood primer and metal primer. These primers are available in sizes from 1 gallon to ½ pint.

BOILER FLUE SET

The "Rural" boiler flue set marketed by Warrington Light Castings, Ltd., Longshaw-street, Warrington, consists of cast-iron sections built into a self-contained unit to fit into any standard domestic fireplace. The boiler has a "U" shaped flue at the back to provide extra heating surface for water heating, and the draught can be controlled by a sliding damper. The output is understood to be 7,500 BTU's per hour at average continuous rating; sufficient to provide reserve for a large airing cupboard, towel rail, or radiator, if required. The fire can be left without attention after refuelling for several hours, and a top extension rail is provided if the fire is wanted to be kept in all night, so that slightly more fuel can be banked with safety.

TIMBER CONNECTORS

The range of "Bat" timber connectors being manufactured in accordance with BS 1579 by Automatic Pressings, Ltd., Malt Mill-lane, Blackheath, Birmingham, includes a double-sided square connector of improved design to enable an efficient joint to be made. It is a mild steel pressing with triangular teeth at right angles to the plate on all sides, alternate teeth being on opposite sides. There is also available a single-sided square connector with teeth only on one side, suitable for making metal to timber or concrete to timber joints. A design department is made available by the firm to advise upon the application of their connectors.

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ROTARY CLOTHES HOIST

The "Nippy" rotary clothes hoist, manufactured by Newhaven Industrial Products, Ltd., Nippy Works, Trading Estate, Newhaven, Sussex, is designed to provide a greater drying area and occupy less space. Quickly adjustable to the required height, it is constructed of heavy-gauge galvanised steel pipe with solid cast-iron fittings, and the rotary action maintains air circulation and faster drying. An umbrella top can be supplied by the firm so that the unit can be used as a garden shade, and a ten years' guarantee is also provided.

PORTABLE CONVECTOR FIRE

A portable convector heater with an optional thermostat is being marketed by the Midland Electric Manufacturing Co., Ltd., 21-22, Rathbone-place, W1, which is designed to take up very little floor space and to be easily cleaned. Finished in bronze, it is available either in 1 or 1½kW. Also included in the firm's range of electric fires is a panel model for mounting direct on the wall, with or without surrounds. No cutting away of the wall is necessary; and one or two double-pole switches can be supplied, according to the size of fire.

MEALS ON BUILDING SITE

Firm Fined for Failing to Provide Suitable Accommodation

A WIGHTWICK building firm was fined £24 on six charges, including some of neglect, at Bilston stipendiary court on September 7. The firm, Shutt and Co., Ltd., of Castlecroft-lane, Wightwick, Wolverhampton, pleaded guilty to each charge. They were charged with failing to provide suitable accommodation for taking meals for their workmen at a Coseley site. They were also charged in connection with failing to provide a gangway of suitable width; failing to provide a suitable guard on a working platform, and not providing a toe board; and allowing loose bricks to be used to support scaffolding, and not securing putlogs of scaffolding.

The prosecutions were all under Sec. 130(1) of the Factories Act, 1937, and under the Building (Safety, Health and Welfare) Regulations, 1948.

"It was a rather lamentable exhibition of scaffolding," said Mr. Thomas M. Hoskison, inspector of factories. He described to the stipendiary, Mr. Kenneth Wood, how workmen had to walk up a single 11-in. plank, unsecured, to go from one part of some scaffolding to a higher level. "It was more of an acrobatic feat," he said.

He said the only provision for shelter on the site was a corrugated-iron hut used partly as a store. "There was no floor—just earth." Mr. Hoskison said that regulations were laid down to bring the conditions up to a modest minimum standard and although Shutt and Co. had abused some of them the firm was not "alone in this."

He said many building sites were the same, and by bringing the firm to court he hoped an example would be set. Mr. R. M. Iliff, for Shutt and Co., said that the offences were not unusual in the trade. The foreman was away at the time.

The company had built 500 houses without accident, and he could do no more than express the company's regret. Shutt and Co. were fined £4 on each charge.

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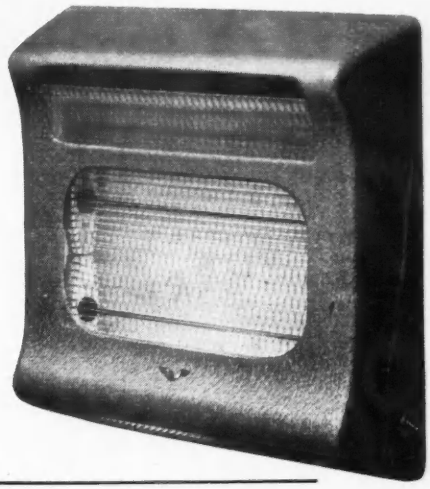

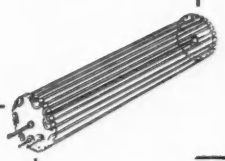

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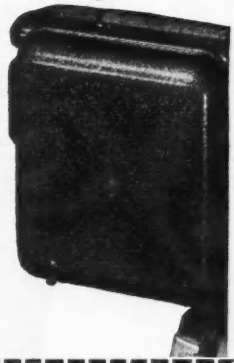

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OVERSEAS BUILDING

[*From Our Own Correspondents*]

Australia.—A factory which will occupy about three acres at Leightonfield, near Villawood, New South Wales, is being constructed for Ducon Condenser, Ltd., and the P and D Construction Co., Pty., Ltd., which has its own designing branch. It is expected to be finished and in production by January, 1955. The total cost will be about £A.330,000. The building will have a striking façade of precast concrete fins extending from the face of the building and rising from ground to roof level. . . . Recently, the Premier of South Australia (Mr. Playford) stated that a £A.20,000,000 model town will be erected adjacent to the long-range weapon base at Salisbury and will have a population of 25,000.

The unnamed town, whose foundations will be laid shortly, when three large building firms move into the area, will lie 17 miles from Adelaide, cover an area of seven square miles, have 6,000 houses, and should be finished by 1964. Each of the six suburbs of the town will be surrounded by a "green belt" and have its own primary school, shopping centre, churches, library, kindergartens, and sports ground. . . . Recently, the Postmaster-General of Australia (Mr. Anthony) stated that the Postal Department would erect a mail branch at Redfern which will cost about £A.3,500,000.

British East Africa.—Building and development plans continue to make progress in British E. Africa. Now that the great Owen Falls Hydro-Electric scheme has been completed there are plans for the building of a power line from the Owen Falls Dam, at a cost of some £4m., to carry power into Kenya down to Nairobi. The East African Power and Lighting Co., Ltd., have formed a subsidiary company, the Kenya Power Company, Ltd., to deal with this new project. . . . In Mombasa about 360 acres of land on the north mainland has been reserved for railway developments. Marshalling yards and locomotive sheds are to be constructed at a cost of about £1m. . . . Reservoirs holding 2m. gallons and 1m. gallons respectively are to be constructed at Sultan Hamud and at Simba, 15 miles away. . . . An outline planning scheme has been prepared for Jinja, one of the most rapidly growing towns in Uganda. The road network has been designed to lead through traffic from Kampala over the Owen Falls Dam and on to a by-pass that will skirt Jinja to the north. On general planning grounds it is considered that a second road crossing the Nile by means of a new bridge, preferably in open span, will be needed in the second phase of the town's development. . . . Anglo-Saxon Petroleum, Ltd., is interested in a proposal to lease land at Mombasa for an oil refinery. Should the plans be approved large scale construction is envisaged. . . . In a recent speech the Chairman of the Uganda Development Corpn., Ltd., said that there was a possibility of over-production of cement in E. Africa within two or three years from now because of the new factories now producing cement at under imported prices. This should serve as a warning to UK cement exporters who at present regard Uganda as a good market. Uganda cement has been selling at 285s. per ton ex-factory as against 352s. to 489s. per ton for imported cement.

Cyprus.—Work is proceeding satisfactorily at Dherelia, one of the two new British Army centres being built in Cyprus. The new barracks are designed to accommodate a complete independent brigade group and its ancillary services. The architect is Alister MacDónald, FRIBA, 10-13, Bedford-street, London, WC2. The contractors are Sir Lindsay Parkinson and Co., Ltd. The second centre on the island is on Episkopi Bay, west of Limasol.

Dominica.—A new generating station is being built in the Dominican Republic for the Companie Electrica de Santo Domingo alongside the old plant in Ciudad Trujillo. The total cost of the new works, which are being supervised by Stone and Webster Engineering Corpn., of Boston, USA, is in the region of $2½m. . . . The contracts for the reconstruction of sections of the Ciudad Trujillo-Santiago highway totalling 49 kms. have been awarded to the Elmhurst Construction Co. of USA, by the Secretary of State for Public Works and Irrigation. It is estimated that the new works will take three years to complete at a cost of £4½m. . . . It is reported that 12 Dominican companies have submitted tenders for the construction of buildings to house workers at the observation post to be erected at Samana on Samana Bay in connection with the American guided missile range, the headquarters of which are at Cocoa, Florida. . . . The Venezuelan construction firm La Del Conte Y Allasia has established a subsidiary company in Dominica mainly for the purpose of competing in bids for the construction of roads, small bridges, and buildings.

Egypt.—The National Production Council of Egypt has been authorised to subscribe £100,000 towards the formation of an Egyptian company, with a capital of £1¼m., which will undertake the construction of grain silos in Cairo and Alexandria. . . . A project for the establishment of a factory for the production of writing paper based on the use of sugar cane stalks is being studied by the National Production Council and by Mohamed Ahmed Abboud, the chairman and managing director of the sugar company. . . . A new fine cotton yarn mill is to be constructed at Kafr-el-Dawar, near Alexandria, for the Misr Fine Cotton Spinning and Weaving Co. . . . A meeting has taken place in Cairo between German, French, American and Egyptian experts regarding the proposed Aswan Dam project. An Egyptian Mission has been in Germany examining preliminary plans prepared by the German firms Hokhtief and Dortmund.

Jordan.—Awarded the chief contract for the building of a Government-sponsored olive-oil refinery at Nablus, Jordan, the Hull engineering firm of Rose, Downs and Thompson, Ltd., expect that delivery of the £60,000 plant will be completed early next year and that it will be in operation by the middle of the year. The machinery will be shipped to Aqaba, and supervisory staff will be sent out to arrange for assembly work. The scheme will comprise two main phases. The first part will be the provision of plant for the blending of olive oil for export purposes, followed by the erection of a mill for the manufacture of various vegetable oils. . . . About 400 miles away a representative of the same firm is supervising the erection at Baghdad of other Hull-made plant for the refining and hydrogenation of cotton oil.

Pakistan.—The Celanese Corporation of America is contemplating the building of an art silk plant in Pakistan. Recently a delegation from the Corporation visited Pakistan at the invitation of the Pakistan Industrial Development Corporation. The Government has announced that it is greatly interested in such a project. . . . The Central Government is to give financial aid to East Bengal to enable a number of projects to be started. About £12m. is to be advanced to meet the requirements of development schemes at Karnaphuli as well as the Ganges Kobadak scheme, roads, thermal power projects, and the Trista Barrage. A grant is also to be given to assist the building of warehouses to store grain.

Switzerland.—The Cantonal Government of Berne in Switzerland has a plan for the construction of a modern airport comparable with those at Geneva, Basle and Zurich. The small airfield at Berne has no hard run-way and can be used only in summer and technical problems prevent its conversion. A new site is, therefore, now being selected and further news should be released shortly. . . . The Cantonal Government of Graubunden is to put a proposal before the Federal Government for the building of a tunnel for vehicles at the St. Bernard Pass. The project is estimated to cost nearly £4m. . . . The Swiss in conjunction with the Italian Government and French Government are to build a tunnel, 12 km. in length, at Mont Blanc.

Turkey.—A nitrogen plant costing £7m. is to be built at Kutahya in Turkey. It is estimated that the plant will produce 117,000 tons of fertiliser per annum and also various chemical products. A factory is also to be built in Istanbul to manufacture nicotine sulphate. . . . Permission has been given to an American firm to establish a factory, in partnership with three Turkish firms, for the production of accumulators and dry batteries. . . .A French firm called "Roussel" and the German Schering concern are reported to be setting up separate factories for the manufacture of pharmaceutical products.

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TRADE FAIR, COPENHAGEN

Joint National Displays

IT was announced at a Press conference held at the Danish Consulate-General in London on September 14 that a British trade fair, organised jointly by the British Import Union of Denmark and the Federation of British Industries, is to be held at Copenhagen from September 29 to October 16, 1955. Her Majesty Queen Elizabeth II and His Majesty King Frederik IX of Denmark have graciously agreed to grant their patronto the fair.

The object of the fair is still further to stimulate British exports to Denmark and to other Scandinavian countries. Exports to Denmark have risen from £64 m. in 1952 to £78 m. in 1953 and £39 m. in the first half of 1954. On a *per capita* basis Denmark is a close second to Norway as Britain's best European customer. On her side, Britain is easily Denmark's best customer: her imports from Denmark were £128m. in 1953 and £62m. in the first half of 1954. The FBI is making available the services of its newly formed subsidiary company, British Overseas Fairs, Ltd., which is at present engaged in organising the British trade fair at Baghdad this Autumn. The company's Exhibition Organiser, Mr. D. A. Lamb, will be manager of the Copenhagen Fair, with a Danish assistant.

The fair itself will be held in the Forum exhibition building, which will be devoted mainly to engineering exhibits, and in Copenhagen's famous Tivoli, which will house the lighter industries. This will be supplemented by British prefabricated temporary structures to provide a total of not less than 120,000 sq. ft. of stand space. It is expected that the Festival Hall at Tivoli, now under construction, will be ready in time for the fair. Mr. John Lansdell, FRSA, MSIA, has been appointed co-ordinating designer, assisted by two Danish architects, Mr. Simon Henningsen (for Tivoli) and Mr. O. Gundlach-Pedersen (for the Forum).

Among industries which may be expected to exhibit will be the following: Electrical equipment and appliances; engineering equipment, tools, etc.; prefabricated buildings; scientific instruments; contractors' plant and building materials.

Communications in the UK should be addressed to the organiser, British Overseas Fairs, Ltd., 21 Tothill-street, London, SW1, or in Denmark to the British Import Union, Raadhuspladsen 45, Copenhagen.

AFRICAN HOUSING LOAN

The Colonial Development Corporation have granted a loan of £2m. to the Kenya Government to build houses for Africans. Mr. F. A. Passells, African Affairs Officer, Nairobi, is officer responsible for African housing in Kenya.

OWEN FALLS CONTRACTORS' PLANT

The Owen Falls Construction Co., Ltd., of Jinja, Uganda, have appointed Messrs. George Cohen Sons and Company, Limited, Wood-lane, London, W12, as sole selling agents for the disposal of the very large quantity of modern civil engineering plant used for the construction of the Owen Falls hydro-electric scheme. Among the items to be sold are: excavators, tractors, dumpers, dump trucks, derricks, steam cranes, diesel locomotives, air compressors, pumps, hoists and lifting tackle of all kinds; also a number of complete plants for batching and mixing concrete, sand washing, crushing and screening, etc.

The SCOTTISH BUILDER

New Town Project

THE Clyde Valley Planning Advisory Committee are perturbed at the delay in the decision on the project for a new town at Cumbernauld to house Glasgow's overspill population.

At a recent meeting of the committee in Glasgow, representatives of the various local authorities discussed the delay, and expressed concern at the lack of any Government decision.

Councillor Peter Meldrum, chairman of the committee, said that the urgency of the development of Cumbernauld had been expressed by the Secretary of State over 18 months ago, and the committee had put their findings before him in August of last year.

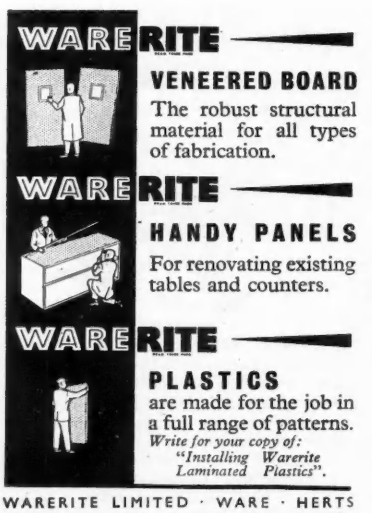
The committee, he added, regarded Cumbernauld as the safety-valve for Glasgow's overspill population, and unless an early decision was made, Glasgow's housing problem would be one of chaos. Sites were being used up far more quickly than was estimated two or three years ago. The city was building up to 6,000 houses a year, and utilising available sites in the process.

"If redevelopment is contemplated, we must have some plans for rehousing tenants before a start can be made at taking down houses," he added.

The committee also asked the sub-committee, made up of representatives of the various Local Authorities, to submit reports of further areas in the West of Scotland which would be suitable for development as new towns.

The possibility of existing communities near Glasgow absorbing part of the overspill population is also being investigated, and the committee hope within the next few months to be able to report on Scottish legislation which might be introduced to meet the financial commitments of new towns.

Another matter considered at the meeting was a request from Greenock Corporation and Renfrew County Council to examine the housing problems there. Greenock is proposing a development in the western part of the town, but there are differences of opinion between the town and county authorities on suitable sites.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SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from May 24, 1954. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

Grade A: Craftsmen, 3s. 9d.; Labourers, 3s. 3½d.

For apprentices, the rates are:

Year.	Percentage of Craftsman's rate.	For week of 44 hours. s.	d.
1st	25	41	3
2nd	33⅓	55	0
3rd	50	82	6
4th	66⅔	110	0
5th	75	123	9

For female labour, the rates are:

	s.	d.
Operatives on craft operations (at end of probationary period)	3	3½
Operatives on labouring operations (at end of probationary period)	3	0

NEW BUILDINGS

Airdrie.—Lanarkshire CC has plans in hand for a large Primary Protestant Sch. to be erected at the Western Craignouk housing site. The Council A is William Watt (F), County Offices, Albert-st., Motherwell-Wishaw.

Ayr.—Plans prepared by their architects have been approved for administrative offices, lecture rooms and halls to be erected for the Territorial and Auxiliary Forces Association, at a cost of £35,000.

Ayr.—Plans have been prepared for new Catholic Church, which will be erected at an estimated cost of £24,000, at the junction of Dalmilling-cres. and rd.

Ayrshire.—CC has had plans prepared for new police buildings at New Cumnock, Mauchlin, etc. Council A is Robert G. Lindsay (A), County-bldgs., Wellington-sq., The Sandgate, Ayr.

Dumfries.—Dumfries Dean of Guild Court approved plans for extension to shop in High-st. for F. W. Woolworth & Co., Ltd., at an est. cost of £19,930.

Dumfries.—Dumfries Dean of Guild Court approved plans to build a block of offices for Scottish Agricultural Industries, Ltd., in George-st. Est. cost £24,850.

Dunbartonshire.—CC has a scheme in hand for a public prim. sch. to be erected at the Hillhead housing district, Kirkintilloch. Plans are to be prepared by Robert J. Walker & Smith (F&F), 180, West Regent-st., Glasgow.

Falkirk.—Plans approved by Falkirk Dean of Guild Court for erection of 66 flatted houses at Glenfuir housing site. Est. cost £87,000.

Glasgow.—Plans prepared and approved for new buildings at King's-dr., Glasgow Green, for Parks Dept.; for extension and additions to the Helen-st. garage, Govan, for the Police Dept.; and new accommodation, etc., for the Transport Dept. The architects are the Planning Works Dept., Municipal-bldgs., George-sq. (for the first two) and the Transport Dept. Engineers, Transport House, Bath-st., Glasgow.

Glasgow.—Plans prepared and approved for scheme of rebuilding and additions, etc., at Wellshot-rd. The architects are John Laird & Son (F&A), 87, St. Vincent-st., Glasgow.

Glasgow.—Plans prepared and approved for new prim. sch. to be erected at a Castlemilk site. The architects are Frank Burnet, Boston & Bell (F&A), 180, Hope-st., Glasgow.

Glasgow.—Plans prepared and approved for George Stark & Sons, Ltd., for alterations and additions at North Woodside-rd., Cowcaddens. The architect is William M. Craigie (F), 17, St. Catherine's-rd., Giffnock, Renfrewshire.

Glasgow.—Plans prepared by their own architects have been approved for new additions and alterations at their factory by William Milne & Co., Ltd., The Old Wynd, Glasgow.

Glasgow.—Plans have been prepared by their architects and approved for new furniture warehouse buildings to be erected at Backcauseway and Westmuir streets by Jacks, Ltd., Warehousemen, Parkhead, Glasgow.

Glasgow.—Plans have been prepared and approved for alterations, additions and extensions for A. Goldberg & Sons, Ltd., to be erected at The Candleriggs, and the Trongate. The architect is Edward W. Watson (F), 29, Alva-st., Westend, Edinburgh.

Glasgow.—Plans prepared and approved for new pavilion to be erected at Maryhill site. The architects are Johnstone & Macintosh, Craigard, Craigton, Milngavie, Dunbartonshire.

Greenock.—Proposed erection of flatted-type houses at two schemes at Shankland-rd., Bogston. Plans have been prepared by Robert L. Rankine (F), Burgh Surveyor's Offices, Municipal-bldgs., Hamilton-st., Greenock.

Greenock.—Plans prepared and approved for new business premises for Messrs. Peter Stewart to be

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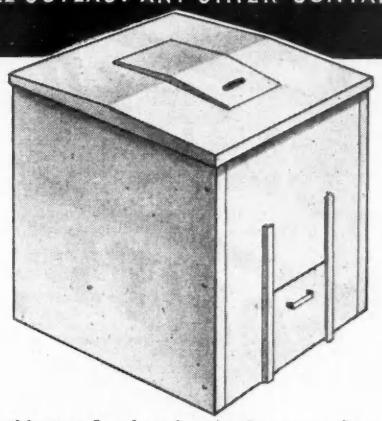

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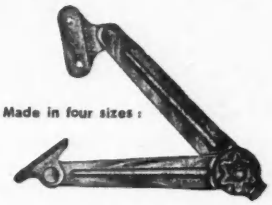

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erected on Braeside housing development site. The architect is John Bolton (L), Swan-bldgs., Hamilton-st., Greenock.

Inverness-shire.—CC has plans in hand for scheme of houses at Newton Mere. The architect is Alexander Cullen (F), County Architectural Offices, Inverness Castle, Inverness.

Inverness-shire.—Plans to be prepared for additions and alterations to be carried out at "The Hotel," Lochcairn. The architect is Hamish Paterson (F), 17, Queensgate-chbrs., Inverness.

Kingairlock.—Plans are to be prepared for Argyllshire CC for new public sch. The architect and quantity surveyor are William R. Tocher (F) and D. B. MacFarlane Johnstone, FRICS, County Offices, Alexandria-pde., Dunoon.

Kinlochleven.—Argyllshire CC has scheme in hand for new school for which plans are to be prepared. The architect and quantity surveyor are respectively William R. Tocher (F) and D. B. MacFarlane Johnstone, FRICS, County Offices, Alexandria-pde., Dunoon.

Kirkintilloch.—Dunbartonshire CC has a scheme in hand for new Protestant Public Sch. to be erected on the Hillside site. The architects are Robert J. Walker & Smith (F&A), 180, West Regent-st., Glasgow.

Lanarkshire.—CC has had plans prepared and approved for extensions to the Bent Public Sch. The Council A is William Watt (F), County Offices, Albert-rd., Motherwell-Wishaw.

Lanarkshire.—Plans have been prepared and approved for the East Kilbride Development Corporation's scheme of 180 houses to be erected at the Murray site (section 7, No. 1). Corpn. A is Frank Scott (L), Torrence House, East Kilbride.

Paisley.—Plans prepared and approved for 174 houses, etc., to be erected as fifth unit of the Glenburn housing development. Corpn. A is John G. MacGregor, BSc, MInstCE, Master of Works Offices, County-sq., Paisley.

The Builder

FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. **The dates at the heads** of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

SEPTEMBER 20.

*†**Southampton CBC.**—Conversion of cottages at Hollybrook Homes. Boro' A. Dep. £1. Tenders by October 11.

SEPTEMBER 22.

†**Kingston-upon-Hull CC.**—Superstructure of new 500,000 cu. ft. pumping station at Haltemprice, contract No. 2. City E. Dep. £5. Tenders by October 27.

*†**Leeds Reg. Hosp. Board.**—Adaptations to blocks 3 and 4 at St. James's Hospital, Beckett-st., Leeds, 9. A to the Board, Park-par., Harrogate.

*†**Plymouth City C.**—Two additional classrooms to Camel's Head School. City A. Dep. £3 3s.

SEPTEMBER 24.

*Bristol City C.—Doctor's house, Bishport-ave., Hartcliffe. City A. Dep. £2 2s.

SEPTEMBER 27.

*†**East Suffolk CC.**—Two flats for midwives, Tunstall. County A. Dep. £2 2s. Tenders by October 22.

SEPTEMBER 28.

*†**Lincoln (Parts of Kesteven) EC.**—Prefabricated timber two-classroom unit and traditional boiler house at Billingborough C. Sch. County A, Sleaford. Tenders by October 25.

SEPTEMBER 29.

*New **Windsor RBC.**—30 garden sheds. BE.

SEPTEMBER 30.

*Luton BC.—(a) reconstruction of stalls at Cheapside Market Hall; (b) 30 houses at Ramridge No. 2 housing estate. BE. Dep. £2 2s. each contract.

*Norfolk EC.—First phase of technical college, King's Lynn. Chief Educ. Officer, Stracey-rd., Norwich.

OCTOBER 1.

*†**Carshalton UDC.**—Conversion of the Oaks Mansion, Croydon-la., Banstead, into four flats. C. H. Durrant, Clerk of C.

OCTOBER 2.

Inverness CC.—22 houses at Beauly. J. Shankley, QS, 2, Ness-walk.

OCTOBER 4.

Grimsby CB.—Constructional works in connection with extensions to transport depot, Victoria-st., Grimsby. J. V. Oldfield, MICE, E&S. Dep. £5.

Penistone (Yorks) UDC.—(1) 16 houses and bungalows at Manchester-rd.; (2) roads and sewers. Turner & Holland, 4, King-st., Wakefield. Dep. £2 2s. each contract.

*Walthamstow BC.—Conversion of "Briar House," 123, Grove-rd., E17, into six flats. Boro' A. Dep. £2 2s.

OCTOBER 6.

South Molton BC.—Cattle Market extensions. Boro' S. Dep. £2 2s.

OCTOBER 7.

*Norman Cross RDC.—Contract No. 1, 54 houses; contract No. 2, site preparation and development work. Ruddle & Wilkinson, F/L/ARIBA, Long Causeway-chbrs., Peterborough. Dep. £2 2s.

Sheffield City C.—Steelwork for Newfield Schools Bridge. City E&S. Dep. £2.

OCTOBER 8.

*Tipton BC.—New highways depot (contract No. 2) with roads, drainage, etc. BE&S. Dep. £5 5s.

OCTOBER 9.

*Glossop BC.—Conversion of "Parkcroft," Dinting-rd., into flats. BS, Municipal-bldgs.

Inverness CC.—24 houses at Kiltarlity. J. Shankley, QS, 2, Ness-walk.

OCTOBER 11.

*Bournemouth CBC.—(1) four classrooms at Stourfield Secondary School; (2) two classrooms at Portchester Secondary School. Boro' A. Dep. £2 2s. each contract.

*Bucks CC.—Ambulance station and garages at West End-st., High Wycombe. County A. Dep. £2 2s.

*Watford RDC.—Six flats at Anthony-cl., Greenla., Oxhey. Dawe, Carter & Ptnrs., architects, 33, Clarendon-rd. Dep. £1 1s.

*Widnes BC.—19 aged persons' bungalows on Ansdell-rd. site. Boro' A. Dep. £3 3s.

OCTOBER 12.

*Salford City C.—Two additional classrooms at Lancaster-rd. School. City E. Dep. £1 1s.

OCTOBER 14.

*Reading CBC.—Two houses in Rodway-rd. Boro' A.

OCTOBER 15.

*Walthamstow BC.—Community centre at The Priory-ct., E17. Boro' A. Dep. £2 2s.

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OCTOBER 21.

*Darlington CBC.—Proposed Arthur Pease county primary school. Boro' A. Dep. £2 2s.

OCTOBER 25.

*Holywell UDC.—14 bungalows at Meadowville estate. E&S. Dep. £2.

NOVEMBER 2.

*Guildford RDC.—Six houses with ancillary works at Wharf-la. E&S. Dep. £3 3s.

NOVEMBER 11.

*Bucks CC.—Erection of police headquarters at Slough. County A, Aylesbury. Dep. £2 2s.

NO DATE.

Wigtown CC.—(1) 34 houses at Kirkcowan; (2) 50 houses at Dunragit. County A, 23, Lewis-st., Stranraer.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

SEPTEMBER 28.

*†**Northants CC.**—Electrical and/or heating installations at either Corby College of FE or Roade Modern School. County A.

SEPTEMBER 30.

Felling UDC.—Materials and components for 70 houses at Leam-la., Heworth. Chief Hsg. Officer.

Manchester T.C.—City S. (Materials.)

OCTOBER 2.

Baghdad Development Brd.—Materials in connection with internal finishing of Royal Palace, Baghdad. Iraqi Embassy, 22, Queen's-gate, SW7. Dep. £5.

OCTOBER 14.

*Chertsey UDC.—Restoration of stonework and external repairs at Chertsey Library. E&S. Dep. £1 1s.

ROADS, SEWERAGE AND WATER WORKS

OCTOBER 1.

Erpingham RDC.—Rural water supply, Matlaske/Holt area, Norfolk. J. C. Melliss & Co., engrs., 110, Horseferry-rd., SW1. Dep. £2 2s.

OCTOBER 2.

Bridgwater BC.—Resurfacing and construction of footpaths, Sydenham estate. Boro' E. Dep. £2 2s.

*Ripley UDC.—Roads and sewers on Bullbridge estate, Ambergate. H. Hillier, S, Town Hall. Dep. £1 1s.

OCTOBER 4.

Buxton BC.—Concrete reservoir of 100,000 gals. capacity. Edward Sandeman, Kennard & Ptnrs., consulting engrs., 1, Victoria-st., SW1. Dep. £5 5s.

East Suffolk and Norfolk River Brd.—Felixstowe flood prevention scheme. K. E. Cotton, MBE, Chief E. to Brd., The Cedars, Albemarle-rd., Norwich. Dep. £5 5s.

Kidderminster BC.—Resurfacing of about 15,000 sq. yds. footpaths and 8,000 sq. yds. carriageway. BS.

Malvern UDC.—Private street works at Bosbury-rd. S & Water E. Dep. £2 2s.

OCTOBER 5.

Southgate BC.—Resurfacing of roads and paths, also fencing. E&S. Dep. £2 2s.

OCTOBER 6.

Beckenham BC.—Making-up of streets. James Dove, AMICE, E&S. Dep. £2.

GENERAL BUILDING WORK (LONDON)

City—OFFICES.—A contract is to be placed soon for the erection of the superstructure of a multi-storey office building at Nos. 30-34, Mincing-la., and Nos. 24-25, Mark-la., EC, for the City of London Real Property Co., Ltd. Howard, Souster and Fairbairn, 81, Piccadilly, W1, are the architects for the scheme, and the excavation work on site is being carried out by George Wimpey and Co., Ltd.

Finsbury—OFFICES.—Plans for the erection of a block of offices on the site of Nos. 3-10, Finsbury-sq., are being prepared by Lewis Solomon, Son and Joseph, architects, 21, Bloomsbury-sq., WC1, in conjunction with a scheme being prepared by Mewes and Davis, architects, of 1, Old Burlington-st., W1, for the erection of bank premises on the adjoining site of Nos. 1 and 2, Finsbury-sq.

Hendon—POLICE STATION EXTENSIONS.—BC have approved, subject to submission of detailed plans, proposals submitted by Estate Surveyor for the Met. Police District for the erection on part of the site of "Dorberic," No. 135, Brent-st., of a number of police married quarters.

Hendon—SCHOOL EXTENSIONS.—The erection of a canteen at Hendon county school, Golders-rise, NW4, with kitchen, offices, etc., has been proposed by the Chief Ed. Officer of Middlesex CC. BC have approved the proposals.

Hendon—FACTORY AND WORKSHOP.—TP approval has been given to proposals by A. F. Hare and Ptnrs., ARIBA, 24, Baker-st., W1, for the erection of a factory, workshop and toilet accommodation at Stapleton Works, Edgware-rd., NW2.

Hendon.—SKATING RINK EXTENSIONS.—Proposals by Thomas and Thomas, architects, 142, Sussex-gdns., W2, for the extension of a skating ring at No. 194, Cricklewood Broadway, NW2, and use of the land at the rear for light industrial purposes, have received TP approval.

Hendon.—FLATS.—BE&S has been instructed to obtain planning permission in principle for the pro-

posed outline scheme of flat development at Spur-rd., Edgware.

Hendon.—CLASSROOMS.—By-law approval has been given to the erection of two classrooms at the Institute, Central-sq., NW11, proposed by J. Barrington-Baker and Ptnrs., FRIBA, 32, Queen Anne-st., W1, on behalf of the governors of the Institute.

Hendon—STORES EXTENSION.—Proposals for the construction of an additional floor to the Central Stores of the National Cash Register Co., Ltd., North Circular-rd., NW2, have been given by-law approval.

Hendon—DWELLINGS.—Development permission has been given to proposals by R. Amesbury, Ltd., builders, 61, Brent-st., NW4, for the erection of six dwellings at the rear of Sunny Gardens-rd., NW4.

(PROVINCIAL)

Accrington.—BC approved in principle central bus terminus at Peel-st.—Managers of Altham CoE sch. received Min. approval for extensions and improvements to premises.

Altrincham.—TC approved plans for office at Stamford New-rd., for Norton & Son.

Barrow-in-Furness.—Plans submitted to BC:—Erection of new church at junction of Park-dr./Abbey-dr., for Trustees of Baptist Church; block of three shops with living accommodation over at Friars-la., for W. Oxley.

Bedlington.—UDC to build 1,000 houses on 90-acres site at Guide Post and Cleaswell Hill. Council has own direct labour organisation under supervision of S, A. K. Dennis.

Belper.—RDC S to prepare plans for 20 houses on Parks-ave. estate, South Wingfield. Tenders to be invited this year.—Surveyor to prepare plans for four or six shops with living accommodation over at Kilburn housing estate.

Birkenhead.—EC received Min. approval for repair and modernisation of Woodchurch-rd. sch., £60,000 est.

Birmingham.—Contracts authorised and placed by Hsg. Com. for erection of 226 traditional houses on following sites:—Wychall Farm (20 houses); Egghill-la., Northfield (100); Slade-la., Yardley Wood (70); The Firs, Castle Bromwich (15); and Humberstone-rd., Pype Hayes (21).—Scheme approved by Hsg. Com. for 18 shops, 17 maisonettes, four offices and 22 garages at the Fordrough, West Heath estate (architect, L. J. Multon, FRIBA, in collaboration with City A); also for 12 shops, three flats, nine maisonettes and 12 garages on Hillyfields estate, nr. Frankley (architect, J. S. Scott, ARIBA, AADip, in collaboration with City A).—Approval also given for placing contracts for 30 temporary shops (designed by City A), at Bartley Green, Woodcock Hill, West Heath, Wychall Farm and Bunbury-rd. estates.—Scheme by City A let for contract, providing for traditional built tenants' room at Bradley-rd., Shard End estate, and at Hidcote-gr., Garretts Green Farm estate.

Blackpool.—Plans submitted to BC:—50 houses and 33 garages at Bispham-rd., for R. Fielding & Sons (Builders), Ltd., Stanhope-rd. Works, Blackpool; new jun. sch. at Langdale-rd., for Trustees of St. Wilfred's CoE sch.; staff canteen at Highfield Laundry, Highfield-rd., for S. H. Brittain & Son, Ltd.; extensions to miners' convalescent home, The Russell Hotel, for R. H. Brown.

Blyth.—MOW to erect offices in Waterloo-rd., for Ministries of Labour, National Insurance and Pensions and National Assistance Board.

Bolton.—TC approved in principle erection of 60 dwellings on Crook-st. site.—Plans submitted to B.C: Reconstruction of "Pilkington Arms," Derby-st., and extensions and alterations at "King's Head" Hotel, Junction-rd., for Wm. Tong & Sons, Ltd., Bolton; extensions and alterations to "Victoria" Hotel, Markland Hill, for Magee Marshall & Co., Ltd., Crown Brewery, Bolton; extensions to cloisters at Thornleigh College, Sharples Park, for Rev. D. J. McCabe; petrol filling stn. at junction of Higher Bridge-st./Egyptian-st., for G. A. Vernon, Stanley-rd. garage; commercial garages and workshop at Chapel-st. and Kay-st., for G. H. Coulson, 2, Redcar-rd., Smithills.

Bradford.—Expenditure more than £1,596,000 approved by Finance Estimates Sub-Com., to include £534,280 for erection by direct labour of 384 dwellings on Halifax-rd. estate; £447,118 for 256 houses and 44 flats and maisonettes on Parkside-rd. estate; and £233,433 for 75 flats and 72 maisonettes in four-storey and five-storey blocks on Thorpe Edge estate.

Coventry.—Scheme to build new central swimming baths at cost £750,000 approved by Markets and Baths Com. Scheme prepared by City A's Department. City A, Mr. D. E. E. Gibson. Start would be made in 1956. Completion of building would require between 2 and 3 years. Site bounded by Cox-st., Cope-st., Priory-st. and River Sherbourne. There will be a large T-shaped central bath with adjacent smaller one for clubs and schools, and third small one for children, seating accommodation for over 1,000 spectators, sun terrace, paddling pool and solarium. The baths will be a framed building of steel or concrete.

Derby.—Bemrose and Sons, Ltd., printers, have bought land in Nottingham-rd., Spondon, for new premises. Max Bemrose, chairman and managing director.

Derbyshire.—CC propose erection of sec. mod. sch. at Creswell.

Durham.—NCB to erect training centre at Tursdale Colliery.

Durham.—CC to place contract for erection of 24 police houses at Chester-le-Street, four at Jarrow, five at Seaham and 12 at Consett. Plans by Cty. A, G. R. Clayton, Court-la.

Farnworth.—F. W. Woolworth & Co., Ltd., Martins Bank-bldgs., Liverpool, propose shop premises at 157/9/161, Market-st. Plans by own staff under W. L. Swinnerton, constructional superintendent.

Felling-on-Tyne.—UDC to build 70 houses by direct labour. S, H. Fawcett.

Horwich (Lancs).—J. W. Roberts, Ltd., Leeds, propose erection of offices and research establishment at Chorley New-rd. Architect, G. A. Burnett, 76, Albion-st., Leeds 1.

Kidderminster.—TC approved stage one of slum clearance scheme in Broad-st./York-st. area, providing demolition of 89 dwellings and erection of 51 houses and eight aged persons' dwellings, £109,500 est.

Leeds.—Big motor vehicle repair centre being built at York-rd., for National Benzole Co., Ltd. When completed will occupy four acres of land, provision made for various workshops on site to include fitters' shop and bays for general repairs. There will be canteen facilities for staff of about 150.

Liverpool.—Goodlass, Wall & Co., Ltd., propose extensions to paint factory at Goodlass-rd., Speke. Architects, Morter & Dobie, 11, Rumford-st., Liverpool.—David Allen & Sons, Ltd., 19, Islington, Liverpool, propose new office and store building at Daulby-st. Architects, Sir A. E. Shennan & Partners, 17, North John-st., Liverpool.—Bents Brewery Co., Ltd., 30, Johnson-st., Liverpool, propose maintenance garage at Great Howard-st. Architects, Sir A. E. Shennan & Partners, 17, North John-st., Liverpool.—TC approved plans for new garage and filling stn. at Speke-rd., for F. H. Wilson. Architects, L. A. G. Prichard & Sons, 24, Oriel-rd., Bootle, Liverpool 20.

Manchester.—Manchester Institute for Deaf propose two-storey extension to premises at York-st., Chorlton-on-Medlock. Plans by City A, L. C. Howitt, Town Hall.—Francis Shaw & Co., Ltd., Gibbon-st., Bradford, propose single-storey extension to engineering works. Architects, Harry S. Fairhurst & Son, 55, Brown-st., Manchester.—Trustees of Sister of Convent of Good Shepherd, Chain-rd., Blackley, propose rebuilding of premises. Architect, Thomas S. Cordiner, 261, West George-st., Glasgow.—Governors of Withington girls' sch., Wellington-rd., Fallowfield, propose extensions to premises. Architects, J. W. Beaumont & Sons, Danlee-bldgs., Spring-gdns., Manchester.—Fine Spinners & Doublers, Ltd., propose four-storey sanitary block to Moston Mill, Nuthurst-rd., New Moston. Plans by own architects' dept., 6, St. James-sq., Manchester.

Mansfield.—BC approved plans for warehouse to pharmacy dept., Stockwell Gate, for Mansfield, Sutton and District Co-op. Soc., Ltd.—Alterations to foundry at Victoria-st., for Antonio Richardson, Ltd.—BC to lease site on the Ladybrook estate, to the RC Trustees for erection of a new church.

Morpeth.—TC approved plans for erection of 134 houses on private estate at south end of town. The builders are William Leech, Ltd., 2, Clayton-st., Newcastle-on-Tyne, and architect, J. W. Hilton, 28, St. Mary's-pl., Newcastle

Nelson.—TC to commence work shortly on erection of further 50 houses.

Newcastle-on-Tyne.—City C received loan sanction for £85,285 for erection of 58 houses at Kenton North; £132,614 for erection of 68 flats and maisonettes in Elswick-st.

Newcastle-on-Tyne.—Benton and District Social Club, Benton have secured site for new club buildings, and propose to have plans prepared.—Plans by J. H. Lee, 15, Tankerville-ter., for four houses in Druridge-dr., Newcastle, for Wilkinson & Toppin, have been approved.—Research laboratory to be built in Haymarket-la. by King's College, Newcastle. Plans by H. S. Wood, 49, Eldon-pl., Newcastle, have been approved.—MacHarg Cinema decided to build new cinema to seat 1,700 on site of blitzed Apollo Picture Hall, Shields-rd.

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North Riding.—CC to let contract for converting "Glenholme," Normanby-rd., South Bank, into flats. Plans by County A, County Hall, Northallerton.

North Riding.—CC to build infant welfare centre sch. clinic, health office and nurses' house at Guisborough, est. cost £16,135. Plans by Cty. A, County Hall, Northallerton.

North Shields.—Tynemouth and Whitley Bay Self Build Assoc. to build five pairs of semi-detached bungalows in Ennerdale-rd.

Northumberland.—CC propose to build family group homes at Cramlington and Bedlington. Plans by Cty. A, C. C. Brown, Newcastle-on-Tyne.—Aged Miners' Assoc. had plans approved for modernising four miners' homes at Pegswood, 10 at Stakeford, and 10 at Lynemouth. Architects, W. Dixon & Son, 1, Collingwood-st., Newcastle-on-Tyne.

Northwich.—UDC received planning approval for erection of annexe to Council Offices.—Boots, Chemists, Ltd., propose rebuilding of premises (formally Prices) at High-st.

Scarborough.—Plans submitted to BC:—New licensed premises at 40/44, Prospect-rd., for T. Laughton, Ltd. Architects, Kitson, Parish, Ledgard & Pyman, Leeds; pair of houses, block of semi-detached houses, shops and flats at Seamer-rd., for A. Henderson, 25, Seamer-rd. Architects, Baker & Clark, 7, York-pl.

Scotswood-on-Tyne.—Adamsez & Co. have had plans approved for extensions to their brickmaking plant.

Sheffield.—TC to invite combined teams of architects, engineers, quantity surveyors and building contractors to submit competitive schemes for housing developments in Stannington area.

Staveley.—UDC approved plans for alterations to Lees Buildings Club and Institute, for Truman, Hanbury and Buxton, Ltd., Burton-on-Trent.

Sunderland.—Martin & Felton, Lloyds Bank-chbrs., Fawcett-st., Sunderland. appointed quantity surveyors by EC for proposed Castle View cty. prim. jun. sch. Boro' A, H. C. Bishop, Grange House, Stockton-rd.

Sunderland.—TC received loan sanction for £18,880 for erection of eight police houses and four offices on various estates; £259,189 for erection of 217 houses on Grindon Village estate.—G. T. Brown & Son, Fawcett-st., Sunderland, prepared plans for 12 houses at Seaburn-gdns. and Queen's-ave., for M. Nunn.—J. Prentice, Leeds-st., proposes four flats at North-gr. and Park Lea-rd. to plans by Matkin & Hawkins, Barclays Bank-chbrs., Fawcett-st., Sunderland.—Layout plans for development of Tunstall Red House estate for William Leech, Ltd., contractors, 2, Clayton-st., Newcastle-on-Tyne, approved.

Todmorden.—Plans submitted to BC, erection of paint shop at Sandholme Works for Sandholme Iron Co., Ltd.

Tynemouth.—TC approved plans by BE, D. M. O'Herlihy, 16, Northumberland-sq., North Shields, for proposed health centre in Albion-rd., North Shields.

West Hartlepool.—TC approved erection of 237 houses on Owton Manor estate this year, instead of 100 as originally proposed. Boro' A, at the Municipal-bldgs., West Hartlepool.

West Riding.—CC propose erection of clinic at Wordsworth-ave., Wheata-rd. and Wheata-pl., Sheffield.—EC received approval for inclusion of following schs. in 1955/6 programme:—Sowerby Bridge sec., £210,000 est.; Holmfirth sec., £160,000 est.; Elland sec., £155,000 est.; Dinnington sec., £175,000 est.; Settle sec., £100,000 est.; Thurcroft jun., £56,000 est.; Thurcroft inf., £45,000; Cudworth inf., £55,000; Bawtry prim., £35,000 est. Morley Wide-rd. prim., £50,000 est.; Barnburgh prim., £35,000 est.

Whitley Bay.—TC approved plans for proposed skating rink with all amenities at Hill Heads, by J. Smith, of Durham. Architect, C. Solomon, St. Mary's-pl., Newcastle-on-Tyne, est. cost £100,000.

Worksop.—RDC approved layout for 52 houses at Hardworth.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Bakewell.—Three pairs of houses at Winster, for RDC: *J. W. Wildgoose (Bonsall), Ltd., £8,717.

Bedale.—Erection of 24 houses in Bedale-rd., Leeming Bar, for RDC. Architects: Richardson & Shaw, 3, Skinnergate, Darlington: *R. B. A. Moody Bros. (Contractors), Ltd., 18, East-rd., Northallerton.

Bicester.—20 houses on Buckingham-rd. site for UDC. *W. A. Price, London-rd., Bicester, £30,754.

Birmingham.—Contracts placed by City Council as follows:—Four dwellings, Braithwaite-rd., Sparkhill: *Frank Davis (Builders), Ltd., £7,250. One tenants' room, two houses, and layout of open spaces, Hutton Estate, Washwood Heath: *George Stubbings, Ltd., £11,514. 145 dwellings, Welsh House Farm Estate: *C. Bryant & Son, Ltd., £191,475. Two dwellings, Ivyfield-rd., Erdington: *Sargent Bros., £3,499. 50 dwellings, Cat-la., Shard End Estate: *Morris & Jacobs, Ltd., £65,749. Four dwellings, Franklin-rd., King's Norton: *J. T. Harris, Ltd., £4,960.

Bolton.—Rebuilding the "Three Tuns" Hotel, Moor-la., for Magee Marshall & Co., Ltd., Crown Brewery, Bolton: *Drapers, Ltd., Tonge Fold, Bury-rd., Bolton.

Bootle.—Houses on Netherton estate for TC. *W. B. Clare (Liverpool), £41,455; *George Wimpey & Co., Ltd., £37,816.

Bootle.—43 dwellings in Derby-rd. Clearance Area No. 1 for TC. *Public Works Section, £59,432.

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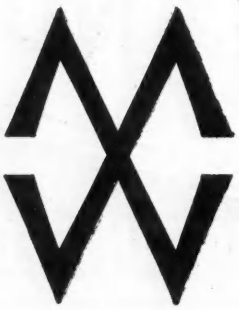

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Burnley.—53 houses at Far Brunshaw estate, for BC: *Direct Labour. Site preparation for extensions at Colne-rd., for Platers & Stampers, Ltd.: *J. Gerrard & Sons, Ltd., Swinton, nr. Manchester. 10 shops with living accommodation at Far Brunshaw estate, for BC: *Russell Bros., Ltd., Wades House-rd., Nelson.

Chatham.—72 flats on the Wood estate, Chatham, for BC. J. A. T. Richards, Deputy BE&S, Town Hall. *C. J. Howard & Son, Ltd., 272a, High-st., Chatham, Kent, £72,126.

Clackmannan.—Coalsnaughton housing development (3rd programme). 32 houses for CC:—Mason & brick work: *James Phillip & McGee, Ltd., Ann-st., Tillicoultry. Carpenter and joiner work: *Robert Keir, 150, High-st., Tillicoultry. Glazier work: *George G. Kirk, Ltd., 43, Port-st., Stirling. Tiler and roughcast work: *J. Robertson & Sons (Slaters), Ltd., 17, Campbell-st., Dunfermline. Plumber work: *J. D. Burns, 31, Chapel-st., Dunfermline. Plaster work: *D. & J. Ogilvie (Builders), Ltd., Inverallan-rd., Bridge of Allan. Electrical work: *A. M. Todd, 83, High-st., Tillicoultry.

Corby.—291 houses at Hazel Leys estate, for Development Corp.: *G. Wimpey & Co., Ltd., London.

Crewe.—Supply and erection of steelwork for examination and repair shop at Crewe Motive Power Depot: *S. & C. Walmsley, Ltd., Stand Park Works, Liverpool.

Cumberland.—Erection of buildings at Eskmeals, for MOW: *John Laing & Sons, Dalston-rd., Carlisle.

Denbighs.—Six police houses at Camberley-dr., Wrexham, and two police houses with office and garage at Queen's Park, Wrexham, for CC: *Owens-Davies, 6, Church-st., Penycae, Wrexham, £12,706 and £5,324.

Dudley.—Erection of factory at Lower Gornal, for Clifford Williams & Son, Ltd.: *T. Humphreys & Sons, Ltd., Lombard-st., Birmingham.

Dunbartonshire.—768 houses (unit 3) at the Drumchapel housing site. Architect, Archibald G. Jury, FRIBA, Housing Offices, Glasgow Cross, The Trongate, Glasgow. Preconcrete flooring and allied works: *The Springbank Flooring Co., Ltd., Springbank Quarry & Concrete Works, Airdrie, £42,534. Metal windows, casements and allied works: *The Crittall Mnfg. Co., Ltd., Barn-st., Blythswood, Glasgow, £23,410.

Durham.—Specialist work to the superstructure in connection with the erection of Consett gram. sch. County A. G. R. Clayton, Court-la., Durham: *Hills (West Bromwich), Ltd., West Bromwich, £92,235.

Farnworth.—Houses for TC at Buckley-la. sites: *E. F. Davis, Ltd., Bank-st., Farnworth, £33,366 (24); *E. F. Davis, Ltd., Hospital-bldgs., Darley, Farnworth, £29,529 (22 off Westland-ave); *S. H. Hodgkiss, Ltd., Farnworth, £10,667 (8).

Fifeshire.—58 houses at the Auld Burn housing site, for St. Andrews Corp. Council A, Robert F. Buick, FRIBA, Master of Works Offices, Municipal-bldgs., St. Andrews, Fife. Excavation, brick, building and allied works: *Baillie & Co. (Builders), Ltd., 64, Argyll-st., St. Andrews. Plumbing, sanitary engineering and allied works: *A. D. Mitchell & Sons, The Tannage Brae, St. Andrews. Slating and allied works: *Baird & Shepherd, Ltd., 11, George Burn Wynd, Kirkcaldy. Joinery, carpentry, ironmongery and allied works: *Melville & Thomson, Ltd., Kinnessburn Contracting Works, St. Andrews. Plaster, lathing and allied works: *Duncan & Bell, Ltd., 3, Kirkland-ave., Lochgerry, Ballingray, Fifeshire. Painting, decorating and allied works: *William Cameron & Son, Ltd., 13, Constitution-st., Dundee. Glazing and allied works: *William Wanliss, Commercial-rd., Ladybank, Fife.

Gateshead.—Three blocks of eight-storey flats for 1,600 people, for TC: *G. Wimpey & Co.

Gateshead.—Factory alterations, Team Valley Trading estate, for Foxgrove Engineering Co., Ltd., Architects, S. W. Milburn & Partners, 9, Esplanade, Sunderland: *D. & J. Ranken, Ltd., Stockton-rd., Sunderland.

Glasgow.—School and other works. Architect, John MacNab, FRIBA, Education Offices, 129, Bath-st., Glasgow. Electrical works on various schs: *Glasgow Corp. Direct Labour Dept., £3,527. Painting, decoration and alllied works to Protestant prim. sch. at Toryglen: *W. & P. MacKerracher, Ltd., South Portland-st., Gorbals, Glasgow, £3,675. Fittings, etc., at above sch. and at Crookston Castle public sch.: *MacDonald & Bros., Ltd., Glasgow, £3,364 and £2,043, respectively. Installation of bathroom and other improvements at Brackenhurst Farm: *Robert Paterson & Sons, Ltd., Milton Contracting Works, Airdrie, £1,285.

Hurdsfield—75 houses for Macclesfield TC.: *Macclesfield & District Association of Building Trades Employers, £96,275; 98, *Kenyon Construction Co., Ltd., Ardwick, £116,439.

Jarrow-on-Tyne.—Erection of a further 66 houses at South Leam-la. estate, for TC. Boro' E, H. W. T. Perkins: *Direct Labour, £98,000.

Lackenby.—Blooming Mill for Dorman, Long & Co., Ltd.: *Davy & United Engineering Co., Ltd., Sheffield. £1m.

Leicester City.—18 shop units with housing accommodation above. New Parks estate. Symington, Prince & Pike, architects, De Mountfort House, De Mountfort-sq. †William Moss & Sons, Ltd., Queens-rd., Loughborough. £83,863.

¶London (Air Ministry).—List of new works contracts to value of £500 or over placed by Directorate of Contracts for week ended September 11.

Building work: G. & J. Seddon, Ltd., Coronation-bldgs., Little Hulton, Walkden, nr. Manchester: Scottish Tarmacadam & Asphalte Co., Ltd., 44/52 Bilbao-st., Glasgow, C2. *Painting work*: J. J. Hamilton & Sons, 8 Hockmore-st., Cowley, Oxford. *Heating services*: E. L. Maiden, Ltd., 27 Fitzroy-sq., London, W4. *General maintenance work*: Robinson & Davidson, Ltd., St. Catherine's Gate, Dumfries. *Runway constructional work*: Geo. Wimpey & Co., Ltd., Hammersmith-gr., London, W6.

London Midland Region (British Railways).—The following contracts have been placed:—West's Piling & Construction Co., Ltd., Columbia House, WC2, for piled foundations for staff amenities building at Spen Dyke. John Laing & Son, Ltd., Dalston-rd., Carlisle, for shunters' accommodation at Peteril Bridge, Carlisle. W. G. Kaleyards, Ltd., Victoria-rd., Chester, for patent roof glazing for wagon repair shop at Salford, Hope-st. depot. Wellerman Bros., Ltd., Dun-st., Sheffield, for relining air shaft No. 2 in Blea Moor tunnel No. 72, Settle and Carlisle line. G. F. Tomlinson & Sons, Ltd., City-rd., Derby, for steel sheet piling to River Trent at Hay Wharf, Burton-on-Trent. W. R. Payne & Sons, Lingerfield, Nab Wood, Shipley, Yorkshire, for labour only for cleaning and painting Waterloo Dock and Sandon Dock goods stations, Liverpool. British Challenge Glazing Co., 14/18, High-st., Stratford, E15, for patent glazing and renewal of roof coverings of engine shed at Nottingham motive power depot. Edward Wood & Sons, Ltd., Park-st., Derby, for improved smoke uptakes to engine shed roof, Saltley motive power depot.

¶London (MOW).—Contracts placed week ending September 4.—*London*: 29/55, Gee-st., Clerkenwell, EC1, internal decorations, Clark & Fenn, Ltd., 16 Old Town, London, SW4. British Museum, internal decorations, J. W. Green (Painters), Ltd., 171 Graham-rd., London, SW19. Belgrave House, King's Cross, NW, external and internal decorations, Sykes & Son, Ltd., 8 Essex-st., Strand, WC2. Charles House, Kensington, W14, external decorations, F. Troy & Co., Ltd., 131 Gt. Suffolk-st., London, SE1. *Bedfordshire*: HPO, Bedford, extension to sorting office, Samuel Foster, Ltd., Kempston, Bedford. *Buckinghamshire*: Marsworth Storage Depot, stage 11, erection of a cocooning building, Frank J. Mitchell, Ltd., 25 Wendover-rd., Aylesbury, Bucks. *Lanarkshire*: UAX, East Kilbride, erection, Wm. Fraser & Partners, Ltd., 16 Crowhill-rd., Bishopbriggs, Glasgow. *Lancashire*: TMO, 3rd, 4th and 5th Floors, Derby House, Exchange Building, Liverpool, internal decorations, Wm. Morris & Bro., Ltd., 14 Colquitt-st., Liverpool 1. MA & F, Standard Building, Heyhouses Lane, St. Annes-on-Sea, internal decorations and cleaning, Wilfrid Coop, Ltd., 94 Whitegate-dr., Blackpool. *Middlesex*: USAF Bases, South Ruislip, Bushy Park and District, sundry alterations and adaptations, Percy Bilton, Ltd., Bilton House, 113 Park-st., W1. *Worcestershire*: TOB, Whittington-rd., Redhill, Worcester, internal decorations, Alfred Bagnall & Sons, Ltd., Navigation-st., Wolverhampton. *Yorkshire*: MPNI, Ardwick-rd., Mexborough, erection of office building, M. J. Gleeson (Contractors), Ltd., 822, Chesterfield-rd., Woodseats, Sheffield 8.: M/T & Civil Aviation, Flamborough, bungalow for coastguard district officer, Wentworth Construction Co., St. Wilfred-rd., Bridlington.

¶London (War Dept.).—Works contracts placed by War Dept. for week ended September 4:—

Warwickshire: Building, Espley & Co., Ltd., Evesham. *Lancashire*: Building, G. Fisher (Fallowfield), Ltd., Chorlton-cum-Hardy. *Worcestershire*: Building, F. Allard & Sons, Evesham. *Lanarkshire*: Heating and ventilating, Steels Engineering Installations (Scotland), Glasgow. *Somerset*: Painting, F. Labbett & Sons, Nottingham. *Wiltshire*: Building, James & Crockerell, Ltd., Durrington, Wilts. *Essex*: Fencing, water main and roadwork, J. S. Alderton & Co., Ltd., London. *Norfolk*: Painting, George Jones & Son (Contractors), Ltd., London; Building, Tooley & Youngs, Stalham, Norfolk.

Lynemouth (Northumberland).—Additions to Lynemouth and District Social Club: *Ashington Industrial Co-op. Soc. (works dept.), Ashington.

Manchester.—Erection of factory at Wythenshawe estate, for Metropolitan Vickers Electrical Co., Ltd., Trafford Park, Manchester: *Direct Labour.

Mansfield.—Seven aged persons' bungalows at Bull Farm estate, for BC: *A. H. Smith (Builders), Ltd., Mansfield, £8,511.

Newcastle-on-Tyne.—Erection of £14,000 vestry at St. John the Baptist Church, Westgate-rd. Architect, G. E. Charlewood, 14, Neville-st., Newcastle. Quantity S, J. Hellawell, Eldon-sq., Newcastle: *J. & W. Lowry, Corporation-st., Newcastle-on-Tyne.

Newcastle-on-Tyne.—Construction of a public-house in Edgefield-ave., for Vaux & Associated Breweries, Ltd., Sunderland. Architect, Morton A. MacKenzie, 1, Eldon-sq., Newcastle: *Snowdon Bros., Belford-rd., Sunderland.

Newcastle-on-Tyne.—Erection of nine houses at Kenton North, for City Council. G. Kenyon, City A, 18, Cloth-market, Newcastle: *Cussins (Contractors), Ltd., The Drive, Gosforth.

Newcastle-on-Tyne.—Factory at Fawdon trading estate, for Scott & Turner, Ltd., chemical manufacturers, Gallowgate, Newcastle. Architects, Cackett, Burns Dick & MacKellar, 21, Ellison-pl., Newcastle: *R. Costain, Ltd., 16, Great North-rd., Newcastle-on-Tyne.

Prudhoe (Northumberland).—Erection of six old people's houses on Oaklands site, for UDC. Architect, J. M. Angus, 21, Lovaine-pl., Newcastle-on-Tyne: *E. Jeffcock (Contractors), Ltd., New Bridge-st., Newcastle-on-Tyne.

Scottish Special Housing Association, Ltd.—Contracts placed between June 23 and August 25, 1954:—

House Erection.

Smeaton, Kirkcaldy (1 Traditional), J. Reid & Sons, Crossgates, Fife. Reconstruction after fire. Valley Gardens, Kirkcaldy (128 Trad.), Barnet & Morton, High-st., Kirkcaldy, Handrails to banking steps. Aberdour-rd., Dunfermline (224 Dunedin), Northern Sports Ground Construction Co., Edinburgh, Handrails to house and banking steps, Peaseflat, Dalkeith, (100 Atholl), G. Grieve & Son, Bank-st., Dalkeith. Reinstatement of fire damage, Fairyburn, Allos (100 Dunedin), Alexander & Son, Belford-rd., Edinburgh, Handrails, Pennyfern, Greenock (252 Lawrence), Barnet & Morton, High-st., Kirkcaldy, Chain-link boundary fencing. Inchmyre Kelso (51 Trad.), SE Scotland Elec. Brd., Galashiels, Electricity supply. Ratho, Station-rd. (24 No-fines), Scottish Gas Brd., Edinburgh, Gas services, Newdykes, Kirkintilloch (78 No-fines), Durastic, Ltd., 110, John-st., Glasgow, Asphalt to balconies. Newbattle (for pump house), SE Scotland Elec. Brd., Musselburgh, Electricity services.

Easter Carmuirs, Falkirk (260 Cruden), Barnet & Morton, High-st., Kirkcaldy, Chain-link boundary fence. Mains of Fintry, Dundee (210 No-fines), Lowden Bros. & Co. Ltd., North Tay-st., Dundee, Electrical; A. D. Mitchell & Sons, Tannage Brae, Kirriemuir, Plumber. Lamlash, Arran (4 Trad.), J. Grant & Son (Decorators), Ltd., Argyle-st., Glasgow, Paint; G. Watson, Invercloy, Brodick, Plaster. Almada-st., Hamilton (108 Miller), Scottish Gas Brd., Hamilton, Gas services. Laighstonehall, Hamilton (60 Miller), Scottish Gas Brd., Hamilton, Gas services. Cadder-rd., Glasgow (102 Trad.), A. McKellar, Ltd., 73, Firhill-rd., Glasgow, Plaster. Park Farm, Port Glasgow (4 Stuart), SW Scotland Elec. Brd., Glasgow, Electricity connections. Park Farm, Port Glasgow (106 Stuart), Robt. Douglas & Co., Nuneaton-st., Glasgow, Metal handrails. Dovecroft, Kirkcudbright (6 Trad.), Alex. Dunn, Ltd., Uddingston, Grates. Dunollie, Oban (150 Blackburn), Blackburn (Dumbarton), Ltd., Dumbarton, All trades.

Post Hill, Cauchie (102 houses), Jas. Strang & Son, Polmont, Boundary fencing. Haldane, Dumbartonshire (120 Weir), SW Scotland Elec. Brd., Glasgow, electric services. Wester Langleet, Galashiels (50 Trad.), Scottish Gas Brd., Galashiels, Gas services. Woodmill, Dunfermline, Barnet & Morton, Kirkcaldy, Chain-link fencing. Faifley, Clydebank (322 No-fines & 352 Miller), SW Scotland Elec. Brd., Clyde Sub-Area, Electricity services. Coalburn, Lanarkshire (48 Scotcon), SW Scotland Elec. Brd., Hamilton, Electricity services. Loreny Drive, Kilmarnock (2 Trad.), SW Scotland Elec. Brd., Kilmarnock, Electricity services; Scottish Gas Brd., Kilmarnock, Gas services. Kildare, Lanark (60 Stuart), Scottish Gas Brd., Uddingston, Gas services. Knock Farm, Renfrew (26 Trad.), Robt. Loudon, Ltd., 45, Haggs-rd., Glasgow, Brick; T. M. Simpson, 11, Clark-st., Blantyre, Plumber; J. Loughbridge, 7, Mid-st., Bathgate, Paint; A. C. Whyte & Co., Ltd., 95, Bath-st., Glasgow, Tiling and roughcast; Jas. Thow, Ltd., 90, Maitland-st., Glasgow, Glazier; Wm. Gibson & Co., Ltd., 25, St. James-st., Paisley, Joiner; Boyne, Smith & Wyllie, 22, Nelson-st., Edinburgh, Electrical.

Coalburn, Lanarkshire (48 Scotcon), A. M. Tweedie & Co., Glasgow, Part rear fencing. Kildare, Lanark (60 Stuart), SW Scotland Elec. Brd., Hamilton, Electricity services. Grieve-rd., Greenock (76 Atholl) Barnet & Morton, Ltd., Kirkcaldy, Fencing. Haldane, Dumbartonshire, Barnet & Morton, Ltd., Kirkcaldy, Fencing; Wm. Prentice & Son, Larkhall, Unclimbable steel palisade fencing. Fairfley, Clydebank (468 Various), Northern Sports Ground Construction Co., Edinburgh, Fencing. Dovecroft, Kirkcudbright (6 Trad.), Marley Tile Co., Bishopbriggs, Floor finish. Crosshill, Campbeltown (24 BISF), A. M. Tweedie & Co., Glasgow, Fencing and gates. Newbattle, Midlothian (286 No-fines), Scottish Gas Brd., Edinburgh, Gas services. Carskeoch, Patna (52 Orlit), County Engineer, Ayr, Water service pipes and connections.

Work undertaken by SSHA Direct Labour Organisation:—

Site Servicing.

Wester Langlee, Galashiels—70 Thomson. Aberdour-rd., Dunfermline—224 Cruden/Dunedin. Falside Bathgate—110 Cruden: 50 Unity. Hilton-rd., Alloa—6 Trad. Coalburn, Lanark—48 Scotcon. Dunollie, Oban—150 Blackburn. Abbots Seat-rd., Kelso—104 Miller. Telford-rd., Edinburgh—308 No-fines.

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House Erection.

Newdyke, Kirkintilloch (54 No-fines flats), Background heating. Cadder-rd., Glasgow (280 No-fines flats), All trades. Arden, Glasgow (168 No-fines flats), All trades.

Maintenance.

Patna, Ayrshire (50 Weir Quality), Boydfield Decorators, Prestwick, Paintwork. Cadder-rd., Glasgow (194 Weir Quality), John Grant & Son, Ltd., Glasgow, Paintwork. Cresswell Hill, Dumfries (2 Weir Paragon), J. Cullen, High-st., Sanquhar, Paintwork. Bucksburn, Aberdeen (3 Weir Paragon), J. A. & J. Rasmussen, Berryden-rd., Aberdeen, Paintwork. Bridge of Weir (2 Weir Paragon), M. & E. Forsyth, Marjory-dr., Paisley, Paintwork. Riddochhill, Blackburn, Barnet & Morton, Kirkcaldy, Boundary fencing.

Skelmersdale.—25 dwellings at Manor Farm site, for UDC: *J. Gee, Pemberton, nr. Wigan, £29,913.

Stretford.—Erection of dining-hall at Ellis Llwyd Jones Hall of Residence, Talbot-rd., for Manchester University: *P. Hamer, Ltd., Park-st., Swinton.

Sunderland.—Alterations and additions in St. Luke's-rd., for Sunderland Forge & Engineering Co., Ltd.: *D. & J. Ranken, Ltd., Stockton-rd., Sunderland.

Sunderland.—Additions to foyer at Seaburn Hall, for TC. Boro' A, H. C. Bishop, Grange House, Stockton-rd., Sunderland: *Direct Labour, £6,000.

Sunderland.—Erection of 38 houses on Grindon Village estate, for TC. Boro' A, H. C. Bishop, Grange House, Stockton-rd., Sunderland: *James Prentice, Leeds-st., Sunderland.

Sunderland.—Erection of joiners' shop at Bartram & Sons' shipyard. Architects, G. T. Brown & Son, Fawcett-st., Sunderland: *D. & J. Ranken, Ltd., Stockton-rd., Sunderland.

Sunderland.—Structural steelwork for proposed factory on 13 acres site at Pallion, for Edison Swan Electric Co., Ltd. Architects, S. W. Milburn & Partners, 9, Esplanade, Sunderland: *Wright, Anderson & Co., Ltd., Gateshead.

Waltham Holy Cross.—166 houses and construction of roads, etc., Pick Hill estate, for UDC. E&S., Geo. Clarke, ARICS, MIMunE. Quantities by Thurgood, Son & Chidgey, 4, Broad-st. Buildings, EC2:—

Humphreys, Ltd.	£307,049
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Percy Bilton, Ltd.	303,229
Charles S. Foster & Sons, Ltd.	302,116
Tersons, Ltd.	301,900
Bunting Construction Co., Ltd.	294,048
S. G. & A. Agombar	292,047
W. J. Simms, Sons & Cooke, Ltd.	288,616
Jenners (Builders), Ltd.	288,555
W. & C. French, Ltd.	288,163
Hale Construction Co., Ltd.	280,480
George Wimpey & Co., Ltd.	274,708
S. & G. Peachey & Sons, Ltd.	271,333
*S. R. Bryett	258,818

Wandsworth.—Construction of block No. 1 of flats, seven cottages and other work at Clapham Park estate extension, for LCC: *Tersons, Ltd., £43,851.

Wellington.—Extensions at Hadley Castle Works, for Joseph Sankey & Sons, Ltd.: *Turriff Construction Co., Ltd., Budbrooke-rd., Warwick.

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